CULTURAL RESOURCES SURVEY OF THE GREENWOOD BIOTECHNOLOGY PARK, GREENWOOD COUNTY, SOUTH CAROLINA

CHICORA RESEARCH CONTRIBUTION 449

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ABSTRACT

This study reports on an intensive cultural resources survey of a 186 acre tract located in Greenwood County, South Carolina, just southwest of the town of Greenwood. The work was conducted to assist Dr. Roger Stevenson and the Genetics Endowment of South Carolina comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The tract, which borders West Alexander Avenue to the south, a railroad line to the north, and Hard Labor Creek to the west, will be developed for a biotechnology park. The surrounding area is being quickly developed with various commercial and industrial properties.

The proposed undertaking will require the clearing of the tract, followed by construction of various infrastructure elements, such as roads, stormwater drainage, and utilities (some of which has already been constructed). Individual lot construction will involve grading, additional utility construction, and subsequent building of structures. These activities have the potential to affect archaeological and historical sites and this survey was conducted to identify and assess archaeological and historical sites that may be in the project tract. For this study an area of potential effect (APE) 0.5 mile from the proposed tract was assumed.

An investigation of the archaeological site files at the South Carolina Institute of Archaeology and Anthropology identified three previously recorded sites (38GN541-543), all of which are located on the current survey parcel and were recorded during the 2003 Cultural Resources Assessment (CRA) by Chicora Foundation. Site 38GN541 is a prehistoric lithic scatter; 38GN542 is a historic cemetery; and 38GN543 is a scatter of historic artifacts. No eligibility determination was made on these sites at the time of the CRA.

The maps at the S.C. Department of Archives and History were also consulted to see if any National Register of Historic Places sites were in the vicinity of the project area. The 2003 CRA also recorded 0042-0093 (Greenwood Mill Village), 0089 (house), 0090 (house), and 0094 (culvert), all of which have been determined not eligible for the National Register.

The archaeological survey of the tract incorporated shovel testing at 100-foot intervals on transects which were placed at 100-foot intervals. All shovel test fill was screened through ¼-inch mesh and the shovel tests were backfilled at the completion of the study. A total of 505 shovel tests were excavated along 64 transect lines.

As a result of these investigations the three previously identified sites were relocated an assessed. Sites 38GN541 and 38GN543 are recommended not eligible for the National Register. The cemetery, 38GN542, is recommended eligible under Criteria C (distinctive elements) and D (information potential).

Finally, it is possible that archaeological remains may be encountered in the project area during clearing activities. Crews should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office or to Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No construction should take place in the vicinity of these late discoveries until

they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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INTRODUCTION

This investigation was conducted by Dr. Michael Trinkley of Chicora Foundation, Inc. for Dr. Roger E. Stevenson, Director of the Greenwood Genetic Center, J.C. Self Research Institute of Human Genetics. The work was conducted to assist the Center comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The project site consists of 186 acres bordering Hard Labor Creek on the southwest side of the City of Greenwood in central Greenwood County (Figure 1). The tract is bordered by Hard Labor Creek on the west, West Alexander Road (S-148) on the south, and the Seaboard Coast Line Railroad on the north. On the east the parcel borders a section of Southern Railroad corridor at its northeast edge and elsewhere borders portions of the Center already developed and the Hill and Dale neighborhood (Figures 2). The parcel is identified as TMS 6845-589-080 in the Greenwood County GIS.

The parcel consists primarily of a series of ridge toes and slopes overlooking Hard Labor Creek. The most significant areas of level uplands have already been developed, either by the Genetics Center or by the Hill and Dale community. Soils are primarily clays and the historic research reveals that during most of the twentieth century the tract was used as a cattle farm and was probably in pasture. Today much of the land is in planted pines. There is evidence of much erosion and some indication of previous terracing.

The parcel is intended by the Center for industrial development. This is likely to include clearing, grubbing, grading, below ground placement of infrastructure such as water and other utilities, and above grade construction. We understand that some filling of wetlands is proposed, necessitating Army Corps permits. It is possible that construction activities will produce at least short-term increases in traffic, noise, and dust-levels. These actions all have the potential to affect above and below grade cultural resources – necessitating this survey and evaluation of cultural resources on the tract.

This study, however, does not consider any future secondary impact of the project, including increased or expanded development of this portion of Greenwood County.

The project will not directly effect any historic structures (since none are located on the survey parcel), but the completed facility may detract from the visual integrity of historic properties, creating what some consider discordant surroundings. As a result, this architectural survey uses an area of potential effect (APE) 0.5 mile radius around the proposed 186 acre tract.

Our proposal for the intensive cultural resources survey was submitted to the Genetics Endowment of South Carolina in early June 2006 and approved on June 13. The field study was conducted by Ms. Nicole Southerland, Ms. Julie Poppell, Ms. Alyson Herbert, and Ms. Kim Igou between July 6 and July 12, 2006. Site specific historical research was conducted by Dr. Michael Trinkley on July 12 and 13 in Greenwood and at the S.C. Department of Archives and History.

Although Chicora had conducted a Cultural Resource Assessment (CRA) of this

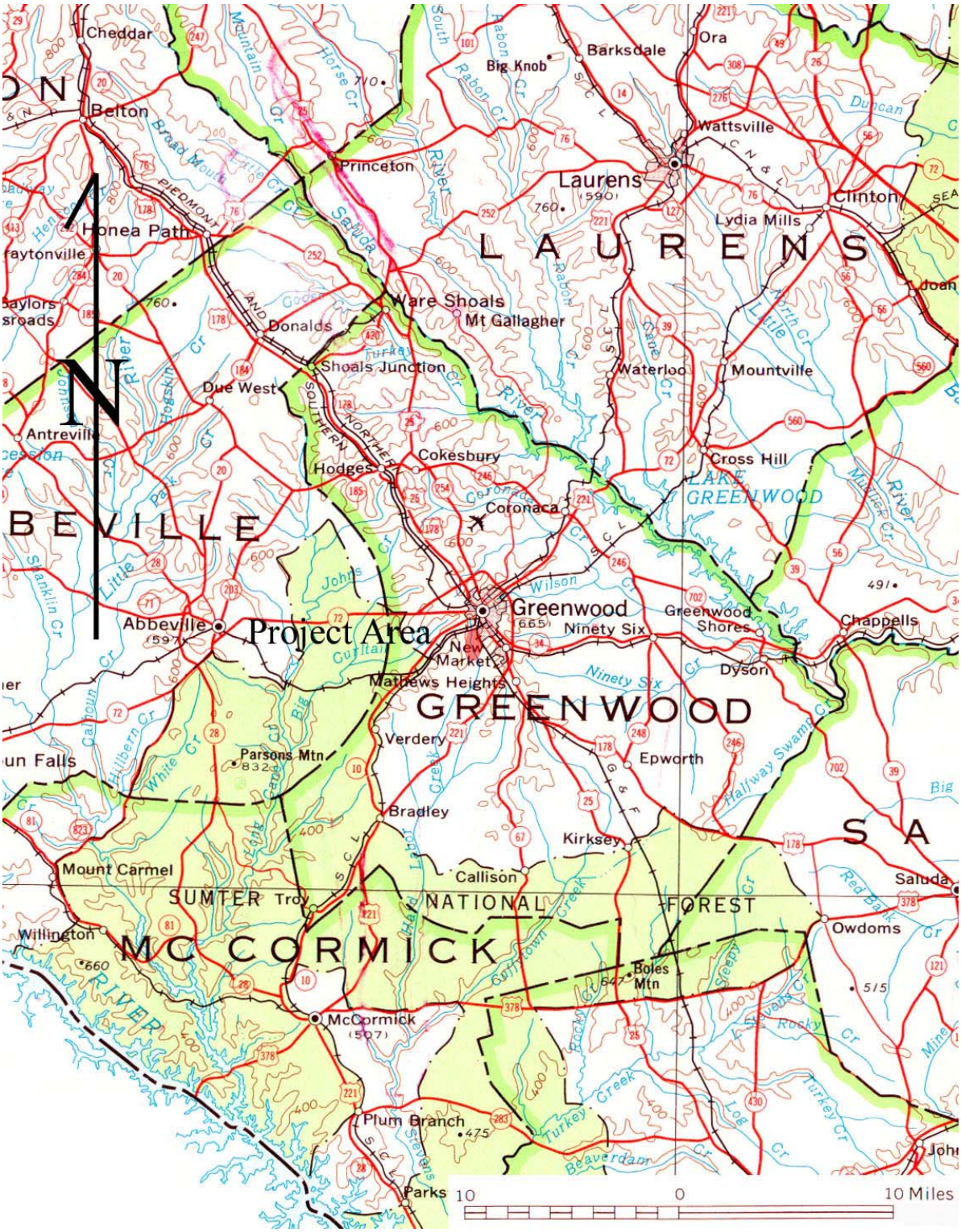

Figure 1. Project vicinity (basemap is USGS South Carolina 1:500,000).

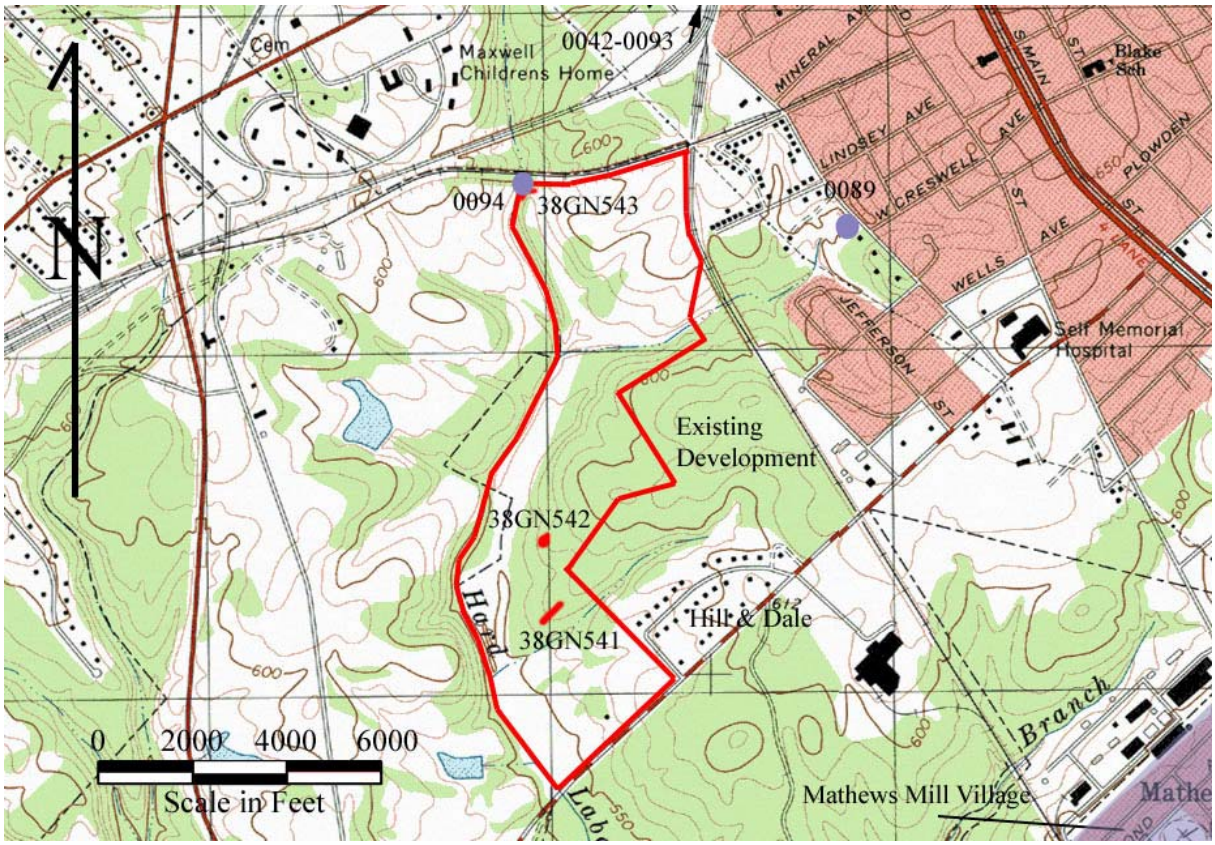

Figure 2. Portion of the USGS Greenwood 7.5′ topographic map showing the survey tract and previously identified sites.

project in early 2003 (Covington and Southerland 2003), given the time lag between this initial CRA and the intensive survey, we conducted a second review of the site files at the South Carolina Institute of Archaeology and Anthropology and the GIS database at the South Carolina Department of Archives and History. For both reviews an Area of Potential Effects (APE) of 0.5 mile was used.

The SCIAA background review identified only those sites recorded by Chicora during the CRA (38GN541, 38GN542, and 38GN543) – no additional archaeological resources have been identified in the general area during the intervening 3 years.

The South Carolina Department of Archives and History GIS was consulted to check for any NRHP buildings, districts, structures, sites, or objects in the study area. Again, only those resources identified by the Chicora CRA were recorded (0042-0092, 0089, 0090, and 0094). All of these had been evaluated by the State Historic Preservation Office (SHPO) as not eligible, based on the CRA data. Just beyond the 0.5 mile APE are two eligible properties – the ca. 1929 Old Greenwood High School, listed on the National Register of Historic Places, and the Mathews Mill Village, determined eligible based on a Cingular Wireless architectural evaluation in 2003.

Archival and historical research included a review of secondary sources available in the Chicora Foundation files and at the South Caroliniana Library, as well as tract-specific research conducted at the Greenwood County Clerk of Court and the South Carolina Department of Archives and History.

The archaeological survey did not identify any additional sites on the study tract, but did provide complete assessments of those sites previously recorded through the CRA. One site, 38GN542 – a historic cemetery – is recommended eligible for inclusion on the National Register under Criteria C (characteristic style) and D (information potential). The remaining sites, 38GN541 and 38GN543 are recommended not eligible and no further management activities are recommended, pending review by the State Historic Preservation Office and the lead federal agency.

Report production was conducted at Chicora's laboratories in Columbia, South Carolina on July 17-20. The only photographic materials associated with this project are digital images, which are not archival. All other field notes and the resulting collections will be curated at the South Carolina Institute of Archaeology and Anthropology.

NATURAL ENVIRONMENT

Physiographic Province

The project tract is situated in central Greenwood County (Figure 1) with most of the study area consisting of ridge toes and side slopes facing west, toward Hard Labor Creek (Figure 2). A small portion also occupies the narrow, well defined floodplain of Hard Labor Creek. Two additional drainages flow westward from the study tract into Hard Labor Creek.

Greenwood County is situated in the western piedmont of South Carolina, bounded to the north by Laurens County, to the east by Newberry and Saluda counties (and the Saluda River), to the south by Edgefield and McCormick counties, and to the west by Abbeville County. The western and southern boundary incorporates large portions of the Sumter National Forest.

Figure 3. View of the project tract looking southeast into the flood plain of Hard Labor Creek.

Physiographically, the area is a thoroughly dissected plain. The relief ranges from nearly level to steep, but it is dominantly gently sloping to moderately steep (Herren 1979:1). Although throughout the piedmont area the elevations range from 450 feet above mean sea level (AMSL) to 1,014 feet AMSL, the elevations in the project area range from about 550 to 600 feet. In general these elevations slope downward toward the bottomlands of Hard Labor Creek.

The drainages form a dendritic pattern and throughout the Piedmont this terrain has been extensively dissected and degraded. Greenwood County is neatly divided by a ridge occupied by US 178. To the east the county is drained by Ninety Six, Wilson, and Coronaca creeks, all flowing eastward toward the Saluda River. To the west, the county is drained by Johns, Hard Labor, and Cuffytown creeks, all flowing southward and eventually into the Savannah River.

Geology and Soils

Most of the rocks of the Piedmont are gneiss and schist, with some marble and quartzite (Hasselton 1974). Some less intensively meta-morphosed rocks, such as slate, occur along the eastern part of the province from southern Virginia into Georgia. This area, called the Slate Belt, is characterized by slightly lower ground with wider river valleys. Consequently, the Slate Belt has been favored for reservoir sites (Johnson 1970), as well as prehistoric occupation (see Coe

1964). The project area is just above the Slate Belt, in an area characterized by highly metamorphosed gneisses, schists, and amphibolites (Murphy 1995:47). The bulk of the soils are formed in materials weathered from the underlying bedrock of granite, schist, or gneiss.

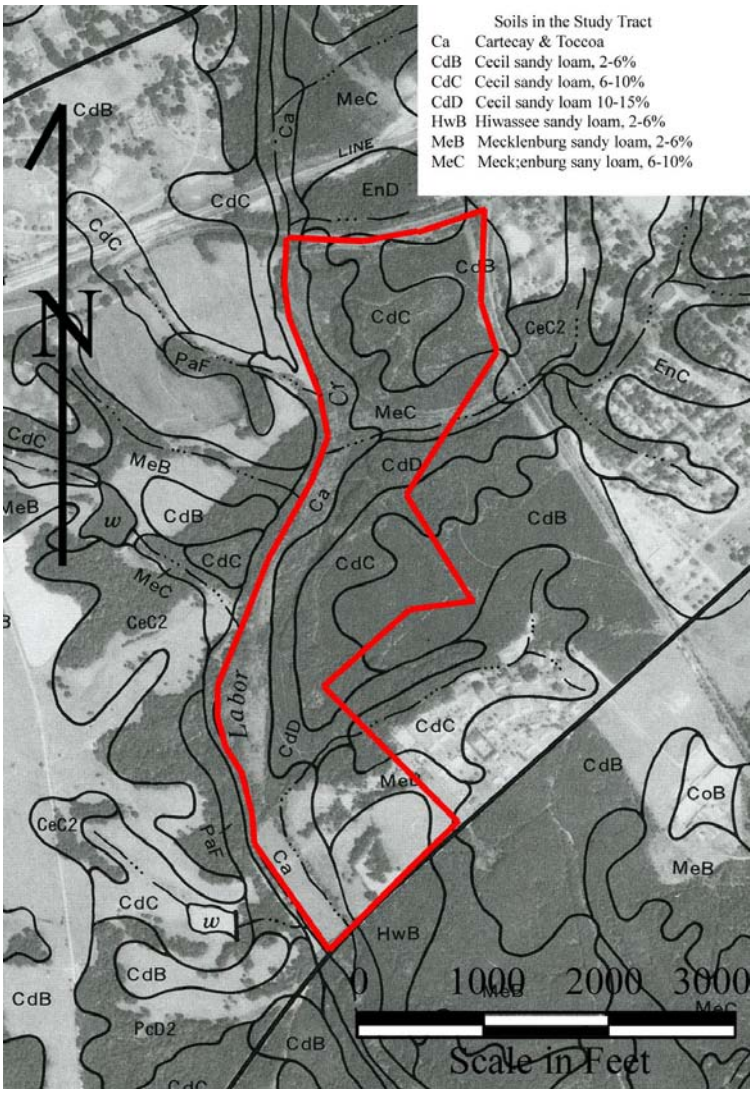

Figure 4. Soils in the study tract.

The study tract includes four soil series: the combined Cartecay & Toccoa, Cecil, Hiweassee, and Mecklenburg. Of these, the most common on Cecil soils, all identified as sandy loams with slopes ranging from 2% up to 15%. The less steeply sloping Cecil soils exhibit profiles with an Ap zone of brown (7.5YR5/4) sandy loam up to 0.4 foot in depth overlying a B horizon of red (2.5YR4/6) clay. As the slope increases the Ap horizon gives way to a sandy clay loam or clay loam (Camp and Herren 1980:12-13).

The Hiwassee soils, limited to the southern edge of the tract, have typical profiles of a dark reddish brown (5YR3/4) sandy loam Ap horizon about 0.5 foot in depth overlying B horizon soils of dark red (2.5YR3/6) clay (Camp and Herren 1980:21).

The Mecklenburg soils, found on broad ridges and breaks, may exhibit Ap horizons of dark brown (7.5YR4/4) sandy loam up to 0.4 foot in depth overlying B horizon soils of yellowish red (5YR4/6) clay (Camp and Herren 1980:26).

The Cartecay and Toccoa soils are limited to drainageways and floodplains – in this study, Hard Labor Creek. Issues of drainage, siltation, and a high water table are found throughout the association. The seasonal high water table is found from the surface to within 2 feet of the surface (Camp and Herron 1980:10, 44).

The 1976 aerial photographs of the tract reveal that much of the survey area has been wooded for a number of years, although some evidence of past logging was encountered. The area under pasture appears to be limited to the area at the southern edge of the tract, which was used for cattle since at least the 1950s.

In 1826 Robert Mills remarked that the soils of the Abbeville District (of which Greenwood comprised the southern half) were

primarily "most generally clay covered with a rich mould, sometimes mixed with sand and gravel" (Mills 1972 [1826]:349). Cotton dominated the agriculture of the district and Mills was already sounding an alarm, commenting that:

> The deteriorating effects consequent upon the planting system, observable in other districts, should prove a lesson to this, to avoid falling into the same error. The woods will disappear fast enough, without clearing more land than can be cultivated to advantage; and, in a hilly country . . ., particular care should be taken, when the lands are left in fallow, to keep them enclosed; and to given them a vegetable coat, to guard the surface from being washed away. It is deplorable to see the neglect of many of our planters in different districts, in this respect; and the consequent destruction of some of the finest farming lands (Mills 1972 [1826]:683-684).

Fairfield planter William Ellison remarked in 1828 that "the successful cotton planter sits down in the choicest of his lands, slaughters the forest, and murders the soil" (quoted in Ford 1988:38). In 1842 agricultural reformer Edmund Ruffin warned of impending disaster from the reliance on cotton and observed that little effort was being made to protect the land (Ruffin 1843:73).

In spite of these early warnings, the South Carolina Department of Agriculture, Commerce, and Immigration, as late as 1907, found no reason to remark on the threat of erosion, noting only that "the second best cotton lands are found in Anderson and Laurens Counties" (State Department of Agriculture, Commerce, and Immigration 1907:255). As Barry has noted:

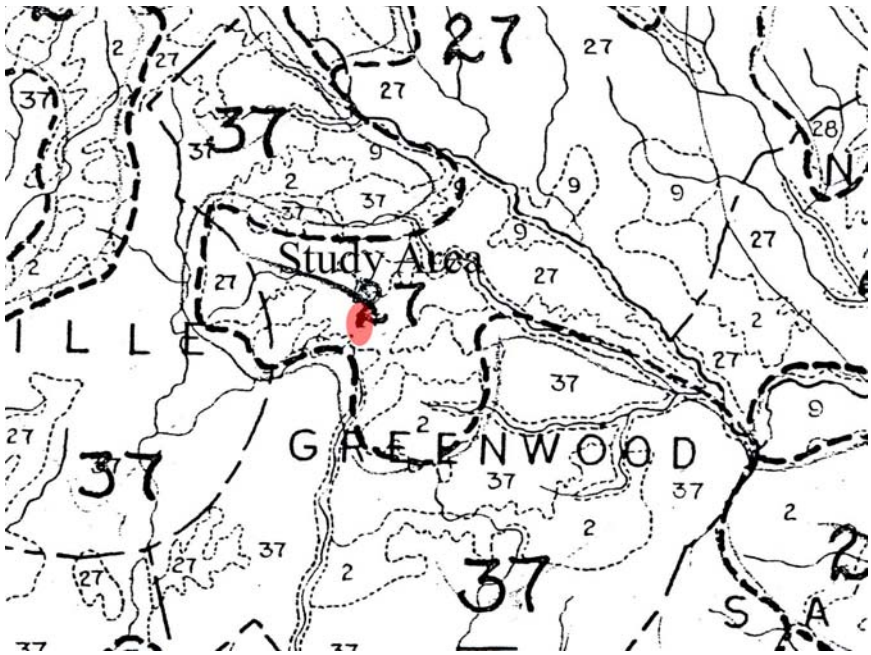

Figure 5. Portion of the 1934 Erosion Survey, showing the project in an area that has lost up to 75% of its surface soil and at the time contained occasional gullies.

> [m]any years ago virgin areas of the Piedmont Province were highly fertile and highly productive, as demonstrated by the high degree of agricultural productivity over the past 150 years. However, mismanagement, over-cropping, erosion, and a multitude of other factors have reduced the once fertile lands to eroded ridges that

Figure 6. Dense understory and second growth vegetation in the central portion of the tract.

require high applications of fertilizers to remain productive (Barry 1980:57).

The 1934 South Carolina Erosion Survey by M.W. Lowry found that this portion of the Piedmont exhibited severe sheet erosion with occasional gullies (Lowry 1934). This portion of the state has lost up to 1.1 foot of soil through erosion in the nineteenth and early twentieth centuries (Trimble 1974:3). It is part of the area classified by Trimble as having high antebellum erosion land use with postbellum continuation and belonging to his Region III — the Cotton Plantation Area (Trimble 1974:15).

Within recent times, at least some portions of the project tract have been logged, likely increasing soil loss originating during earlier agricultural activities. The United States Forest Service has determined that logging accounts for upwards of 0.36 tons of soil erosion per acre per year in this region, while areas of skid trails have erosion rates of about 9.91 tons per acre per year (U.S. Department of Agriculture 1980:25). This is clearly evidenced by the shovel tests conducted in the project area.

Figure 7. Old field on ridge side slope.

Climate

Elevation, latitude, and distance from the coast work together to affect the climate of South Carolina, including the Piedmont. In addition, the more westerly mountains block or moderate many of the cold air masses that flow across the state from west to east. Even the very cold air masses which cross the mountains are warmed somewhat by compression before they descend on the Piedmont.

Figure 8. Wetland vegetation on Hard Labor Creek.

Consequently, the climate in this area is temperate. The winters are relatively mild and the summers warm and humid. Rainfall in the amount of about 46 to 47.5 inches is adequate. In general, about 23 inches of rain occur during the growing season, with periods of drought not uncommon during the summer months. As Hilliard illustrates, these droughts tended to be localized and tended to occur several years in a row, increasing the hardship on those attempting to recover from the previous year's crop failure (Hilliard 1984:16). Perhaps the best wide-scale example of this was the drought of 1845, which caused a series of very serious grain and food shortages throughout the state.

The average growing season is about 217 days, although early freezes in the fall and late frosts in the spring can reduce this period by as much as 10 or more days (Camp and Herren 1980: Table 11). Consequently, most cotton planting, for example, did not take place until middle May, avoiding the possibility that a late frost would damage the young seedlings.

Floristics

Piedmont forests generally belong to the Oak-Hickory Formation as established by Braun (1950). The potential natural vegetation of the area is the Oak-Hickory-Pine forest, composed of medium tall to tall forests of broadleaf deciduous and needleleaf evergreen trees (Küchler 1964). The major components of this ecosystem include hickory, shortleaf pine, loblolly pine, white oak,

Figure 9. Channalized creek in the study tract.

and post oak. In actuality, the Piedmont is composed of a patchwork of open fields, pine woodlots, hardwood stands, mixed stands, and second growth fields. Shelford (1963) includes the Carolina Piedmont in the Oak-Hickory zone of the Southern Temperate Deciduous Forest Biome.

Today the "patchwork" is more than ever clearly visible. The survey tract includes a few areas of planted pines, hardwood stands, mixed stands, and grassed pastures (see Figures 3, 6, 7, and 8 for examples). The vegetation and landscape of some small drainages in the tract have been altered by what appears to be channalization (Figure 9).

PREHISTORIC AND HISTORIC OVERVIEW

Previous Research

The Piedmont has been the focus of considerable archaeological research. Derting et al. (1991), for example, cite 73 studies specific to Greenwood County. Virtually all of these are compliance related.

There is no single synthesis of the area's archaeology. Perhaps the most thorough overview specific to the Greenwood County area is the survey of the Laurens-Anderson highway connector (Goodyear et al. 1979). In this study, the bulk of the prehistoric sites were low density Archaic Period lithic scatters found in the uplands along the larger streams. This provides a basic model for site location.

More recently the Sumter National Forest (situated to the south and west of Greenwood) has produced an overview that also includes site modeling. Three zones have been identified; Zone 1 is identified as broad floodplains and larger drainage bottoms, Zone 2 is identified as upland areas of low topographic relief, and Zone 3 is classified as areas of high relief containing slopes greater than 10%. High probability for prehistoric sites has been identified for those Zone 1 areas that are elevated, such as old levees and ridges and for Zones 2 and 3 where there are ridge tops, noses, saddles, crests, and other well-defined low slope areas within 500 feet of water sources or Zone 1 areas. Moderate probability areas are defined as Zone 1 areas of broad floodplains or bottoms and Zone 2 and 3 areas of less than 10% slope, even if greater than 500 feet from water. Finally, low probably areas include Zone 1 floodplains that are active and Zones 2 and 3 where the slopes are greater than 10% and where there is loss of soil (Benson 2006:225-226).

Although these models sound complex, they are actually quite simple and follow what has been generally accepted among archaeologists for a number of years. Much of the study tract would be considered as evidencing high to moderate archaeological potential with no further evaluation of soil loss and erosion – there are numerous ridge tops, noses, and saddles – all in close proximity to water sources. Steep soils are limited to a band paralleling Hard Labor Creek in the southern half of the tract. There are, however, no clearly defined ridges or high areas in the Hard Labor floodplains and these areas are generally narrow, with few areas that would be classified as broad.

The bulk of archaeological research in Greenwood County consists of surveys in Sumter National Forest or S.C. Department of Highways and Public Transportation surveys which are too numerous to individually list (see Derting et al. 1991). Rodeffer and Holschlag (1979) published a reconnaissance level survey report for Greenwood reporting on 358 archaeological sites. Of these, 295 contained prehistoric components, while 167 contained historic components.

In addition, the Paleoindian and Early Archaic are carefully explored by a variety of authors in an edited volume by Anderson and Sassaman (1996). These same researchers have also explored the Middle and Late Archaic (Sassaman and Anderson 1994). The Woodland and Mississippian is less well researched for the Piedmont, although Anderson (1994) does provide a generalized overview.

Historic site location is more difficult to gauge given the scarcity of work in the area. The bulk of historical archaeology in the county has been performed at Ninety-Six, associated with the late eighteenth century use of the village of Cambridge and the star fort occupied by the

British (see, for example, Baker 1972; Holschlag and Rodeffer 1976a; 1976b; 1977; 1978). Brooks and Crass (1991) have provided synthetic information on research at the nearby Savannah River site. It is likely that their predictive model for site location can be transposed to Greenwood County. They found that the earliest occupations were located on rivers, but as the eighteenth century progressed, creeks were also a focus of settlement. During the nineteenth century settlement became more road oriented.

Of particular relevance to this study is our earlier cultural resource assessment (CRA) for the project tract (Covington and Southerland 2003). This review found no previous archaeological sites recorded in a 0.5 mile area of potential effects (APE), but did identify three sites – 38GN541, a prehistoric scatter; 38GN542, a historic cemetery; and 38GN543, a historic scatter. These were not assessed, however, since CRAs do not provide the testing and data collection necessary to allow eligibility determinations to be made.

The CRA also found no previously recorded architectural sites in the study tract or the 0.5 mile APE. Four, however, were recorded – 0042-0093, the Greenwood Mill Village to the north of the study tract; 0089, a structure at 962 Spring Street; 0090, a structure at 820 Edgefield Street; and 0094, a railroad abutment over Hard Labor Creek. All of these sites were evaluated by the State Historic Preservation Office as not eligible, based on the GIS database.

Prehistoric Overview

In the Carolina Piedmont, lithic scatters are the most common type of prehistoric site encountered. Goodyear et al. (1979:131-145) found that lithic scatter sites located in the inter-riverine Piedmont were geographically extensive and exhibited little artifact diversity. These sites have been interpreted as:

> limited or specialized activity sites which represent resource exploitation or other distinct functions. Nearly all investigators working in the Piedmont have related these sites to activities involving hunting, nut gathering, and procuring of lithic raw materials (Canouts and Goodyear n.d.:8).

Although the vast majority of these sites are located in eroded areas and exhibit little to no subsurface integrity, Canouts and Goodyear (1985) argue that they have analytical value. This value lies in their horizontal rather than vertical dimensions. They argue that:

> [f]uture investigators of upland site must effect broad-scale spatial analyses comparable to the temporal analyses effected through excavation of deeply stratified sites. Both endeavors are necessary, and neither is sufficient for the total understanding of Piedmont prehistory" (Canouts and Goodyear 1985: 193).

One observation that Canouts and Goodyear (1985) made is that lithic raw material ratios change through time. For instance, at the Gregg Shoals site in Elbert County, Georgia, the Early Archaic assemblage reflects greater use of non-local cryptocrystalline materials and the Late Archaic, greater use of non-quartz local material (see Tippitt and Marquardt 1981). Examination of changing use of lithic resources will help archaeologists better understand issues such as the extent of seasonal rounds, trade networks, and social organization. Clearly, the discussions by Canouts and Goodyear (1985) argue strongly for a higher regard for the "lowly" lithic scatter — a very common occurrence in the Piedmont.

Figure 10 provides an overview of the cultural sequence commonly found in the Carolina Piedmont.

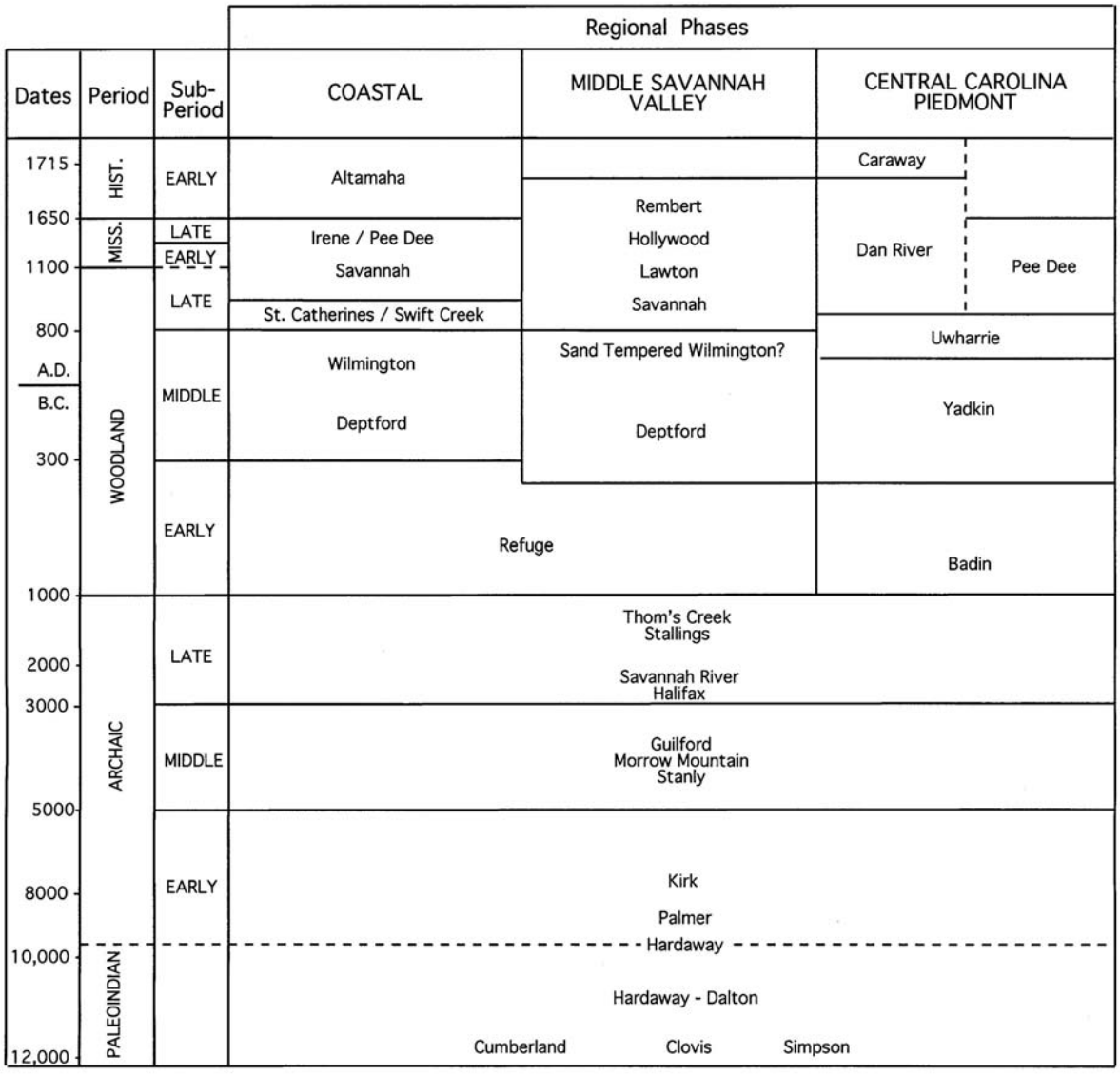

Figure 10. Generalized cultural sequence for the Piedmont of South Carolina.

Paleoindian Period

The Paleoindian period, lasting from 12,000 to 8,000 B.C., is evidenced by basally thinned, side-notched projectile points; fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Michie 1977). The Paleoindian occupation, while widespread, does not appear to have been intensive. Points usually associated with this period include the Clovis and several variants, Suwannee, Simpson, and Dalton (Goodyear et al. 1989:36-38).

Unfortunately, little is known about Paleoindian subsistence strategies, settlement systems, or social organization. Generally, archaeologists agree that the Paleoindian groups were at a band level of society, were nomadic, and were both hunters and foragers. While population

density, based on the isolated finds, is thought to have been low, Walthall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Walthall 1980:30).

Very little work in the state has been able to focus on Paleoindian settlements because of the rarity of the site type. No evidence was found for Paleoindian occupation in the Laurens-Anderson inter-riverine area, which is not surprising since elsewhere in the state these sites are usually found clustered along major drainages and their tributaries which is interpreted by Michie (1977:124) to support the concept of an economy "oriented towards the exploitation of now extinct mega-fauna."

One site identified in the Sumter National Forest (Price 1992), in neighboring Laurens County, is believed to have a possible Paleoindian component (38LU317). It is situated on a ridge saddle adjacent to a spring which feeds into the Enoree River, located only about 0.3 miles to the north. This fits well with previous arguments that Paleoindian sites will be located adjacent to major drainages.

Anderson (1992:32) suggests that the comparatively low density of Paleoindian diagnostics in South Carolina may be because the state could have been on the edge of the ranges of groups centered in other areas. He suggests that permanent settlements elsewhere probably occurred later in the Paleoindian period, only when population levels had grown appreciably in these centers. This would help to explain the overlap in stylistic traditions (such as the Clovis, Suwannee, Simpson, and Dalton) observed in South Carolina which perhaps resulted from populations expanding outward from these centers.

Archaic Period

The Archaic period, which dates from 8000 to as late as 500 B.C. in the Piedmont, does not form a sharp break with the Paleoindian period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Archaic period assemblages, characterized by corner-notched, side-notched, and broad stemmed projectile points, are common in the vicinity, although they rarely are found in good, well-preserved contexts (for a thorough discussion of the Early Archaic, see Anderson and Sassaman 1996, while Anderson and Joseph 1988 offer a review of prehistoric archaeology along the upper Savannah River).

Prehistoric sites in the Piedmont inter-riverine zones are for the most part characterized as "upland lithic scatters" (House and Wogaman 1978:xii). These sites are shallow deposits without stratigraphic definition, contain a diversity of artifacts, and are commonly disturbed by plowing and/or erosion (Canouts and Goodyear 1985; Trinkley and Caballero 1983:27).

Early Archaic

During the Laurens-Anderson study (Goodyear et al. 1979), four sites with Early Archaic components were identified. Each of these sites contained a single example of Dalton[1] points or probable Dalton preforms made of indigenous Piedmont quartz. The following Palmer phase was found to be very common in the area and was represented by 28 sites. While most of the specimens were manufactured from the local quartz, some were manufactured from Coastal Plain chert from the Flint River formation located in the lower coastal plain of South Carolina and Georgia. There were also examples of metavolcanic rhyolite from the Carolina Slate Belt and what may be "Ridge and Valley chert" from eastern Tennessee.

At these sites a wide range of tool types

[1] Some researchers (see, for instance, Anderson 1992) classify Dalton as Paleoindian while others (Goodyear et al. 1989) classify it as Archaic.

were identified including a large number of unifacial and flake tools believed to be associated with the Early Archaic occupation. Goodyear et al. (1979:197) found that while Early Archaic sites with unifaces were found throughout the corridor, sites on ridgetops which were large watershed divides produced higher counts. They believe that the large number of sites producing Palmer points is related to environmental changes at that time. The large diversity in lithic raw material provided information regarding their "mobility patterns and regions of interactions" (Goodyear et al. 1979:198).

Anderson and Hanson's (1988) band/macroband model of Early Archaic settlement was formulated primarily to evaluate data from the Savannah River basin. In the Savannah River Valley, settlement organization of the Early Archaic people was "characterized by the use of a logistically provisioned seasonal base camp or camps during the winter, and a series of short-term foraging camps throughout the remainder of the year" (Anderson 1992:36). During the early spring, the groups are believed to have moved toward the coast, then back into the upper coastal plain and piedmont during the later spring, summer, and early fall. During the winter they returned to their base camp incorporating some side trips to other drainages for aggregation events by groups from two or more different drainages. These aggregation sites are believed to have been located on Fall Line river terraces (Anderson 1989a:36). One example of a postulated base camp is the G.S. Lewis site at the Savannah River Site. This site is located on a ridge adjacent to the confluence of Upper Three Runs Creek and the Savannah River. Given this scenario for the Savannah River basin (which likely applies to other river basins), Early Archaic sites in the Piedmont were likely occupied from summer until fall and don't include aggregation sites. Anderson and Hanson (1988) place the Upper Piedmont in the Saluda/Broad macroband settlement system. At the band level, they proposed "co-residential population aggregates" consisting of 50 to 150 people which occupied and moved primarily within one drainage basin. They projected that individual macroband population was between 500 and 1500 people. They also formulated a spatial model for the distribution of individual bands over the South Atlantic Slope.

Anderson (1989b) notes that data from the Savannah River Site and the Richard B. Russell Reservoir "suggest that a decline in utilization of the Coastal Plain may have occurred at the same time as an increase in utilization of the Piedmont [and] may be a part of a trend noted in the terminal Early Archaic in the general region. Settlement patterning in any given area was thus likely shaped by a range of variables, such as local resource structure, as well as by more regional trends in climate, population density, and these patterns apparently changed appreciably over time" (Anderson 1992:39). Data from the Laurens-Anderson study and the Savannah River project suggests that inter-riverine sites will be found on hills between watershed divides and riverine sites will be located on knolls adjacent to a major confluence.

Middle Archaic

Morrow Mountain and Guilford points constituted the primary evidence for Middle Archaic (5000 to 3000 B.C.) occupation in the Laurens-Anderson corridor (Goodyear et al. 1979). Morrow Mountain constituted the vast bulk of these projectile points and were present in both the I and II varieties.[2] Over 95% of the 145 points were manufactured from the local quartz, which parallels other findings in Piedmont South Carolina. Guilford was not nearly as prominent and consisted of 35 finished specimens or preforms, all of which were manufactured from quartz.[3]

[2] Coe (1964) describes Morrow Mountain I as a small triangular blade with a short pointed stem, while the Morrow Mountain II is described as a long narrow blade with a long tapered stem. While he describes them as different types, he notes that many people have chosen not distinguish between the two.

[3] Preforms represent an intermediate stage

The Middle Archaic period was found to consist of the largest number of sites. In terms of geographic distribution, Goodyear et al. (1979) found that the Morrow Mountain phase was much like the Palmer phase, with sites occurring on ridges between watersheds. However, the almost complete reliance on local quartz separates the Morrow Mountain and Guilford phase sharply from the earlier Palmer phase. They suggest that "[t]he large number of Middle Archaic sites well dispersed through the inter-riverine areas and the abundant nature of chipped quartz remains on these sites suggest frequent movement and activity throughout the Piedmont of South Carolina" (Goodyear et al. 1979:207). Data from early reservoir projects (see, for example, Wauchope 1966) as well as inter-riverine observations by Caldwell (1954; 1958) and Coe (1952) made it clear that there were sharp contrasts between riverine and inter-riverine sites in terms of artifact diversity and density, and in the use of shellfish (Sassaman and Anderson 1994:134). With the advent of cultural resource management in the 1970s, additional data was available and further emphasized these differences. All of this data indicated that the largest and densest sites were located along large rivers, and that small, sparse sites were found throughout the uplands. While these differences were clear, what remained unclear was the relationship between riverine and inter-riverine sites in a settlement-subsistence system, and how, if at all, this system changed over time (Sassaman and Anderson 1994:135).

House and Ballenger studied this issue during their survey work on the proposed Interstate 77 project in 1976. They classified riverine zones of containing only the largest rivers while inter-riverine zones consisted of smaller rivers and streams. House and Ballenger (1976) argued that streams with a ranking of 3 or higher[4] contained resources that were not abundant in the uplands (fish, turtle, raccoon, etc.), whereas smaller streams had a higher density of deer and nut masts. The resulting archaeological assemblages from these distinct areas should, themselves, be distinct (House and Ballenger 1976; Sassaman and Anderson 1994). They divided their sites into habitation and extraction sites[5] using a lithic tool classification scheme that would allow functional sorting of the two site types. From the information gathered using this analysis, coupled with data on the seasonal availability of resources, they created a Middle and Late Archaic settlement model:

> involving spring and summer residence along major rivers; a move to seasonal base camps in upland creek valleys in September to take advantage of deer concentration in upland hardwood zones, with some exploitation of other resources as well; and then a return to riverine-located winter quarters

between flakes from secondary cores and quarry blades. Some are worked bifacially, although most are unifacial and still retain the platform and bulb of percussion. Quarry blades are usually bifacially worked and are made to allow easy transportation of lithic materials until the time it is needed to be made into a projectile point. Some researchers have used the terms preform and quarry blade interchangeably, meaning the bifacially worked ovate blade.

[4] According to the system, based on Strahler (1964) 1st order streams are the fingertip tributaries at the head of a stream and may either be year-round or seasonally flowing streams. A 2nd order stream is formed by the confluence of two 1st order streams. A 3rd order stream is formed by the confluence of two 2nd order streams, etc. This system requires that at least two streams of a given order be joined to form a stream of the next highest order. The main stem of a river will always have the highest order.

[5] An extraction site is an area where resources (such as fish, lithic raw material, etc.) were obtained and is often represented by lithic debitage and perhaps small camp sites. A habitation site is a seasonal or temporary camp where these resources were usually consumed, used, or worked.

> with permanent houses in about December when the coldest months arrived, the deer rutting season came to an end, and the acorn mast in the hardwood forests began to be exhausted (House and Ballenger 1976:117).

The Windy Ridge site (House and Wogaman 1978), while fitting the expected upland site profile as proposed by House and Ballenger (1976), may have been used as a habitation site during the Middle Archaic. Other projects also complicated the model. Work in the Richard B. Russell Reservoir (Anderson and Schuldenrein 1985; Tippett and Marquardt 1981) examined a number of sites with Morrow Mountain components. Interestingly, none of these riverine sites produced denser or more diverse remains than did inter-riverine sites. This suggested that Middle Archaic people were not using the riverine and inter-riverine areas much differently in this part of the state (Sassaman and Anderson 1994:137).

Sassaman (1983) attempted to more closely examine Middle and Late Archaic settlement patterns by examining sites from a number of piedmont studies. He found that Middle Archaic settlement in the South Carolina Piedmont did not fit the riverine-inter-riverine model. This suggested that Middle Archaic people were much more mobile, perhaps moving residences every few weeks which fit Binford's (1980) definition of a foraging society. Binford (1980) proposed that foragers had high levels of residential mobility, moving camps often to take advantage of dispersed, but similar resource patches. Collectors stayed in one location longer, by sending out specialized work parties to exploit resources in widely dispersed and distinct resource patches. He believed that differences in environmental structure could be traced to large scale climactic factors. He further noted that a collector system could arise under any conditions that limited the ability of hunter-gatherers to relocate residences. During his work in the Haw River area of North Carolina, Cable (1982) argued that postglacial warming at the end of the Pleistocene led to increased vegetational homogeneity which encouraged foraging.[6]

Sassaman (1983) suggests that this indicates a large degree of homogeneity of the piedmont environments. They also had a high degree of social flexibility, allowing them to pick up and move when needed. This high level of mobility did not allow them to transport much material, which in turn, alleviated the need for elaborate or specialized tools to procure and process resources at locations distant from camp. Since quartz is practically everywhere in the piedmont, tools could be easily replaced and were expedient. The high mobility and the expediency of tools help to explain the abundance of Middle Archaic sites in the piedmont without having to imply a population explosion. Sassaman called this model the "Adaptive Flexibility" model (Sassaman 1983; Sassaman and Anderson 1994).

Late Archaic

Savannah River Stemmed and Otarre[7] stemmed points are the primary indicators of Late Archaic settlement in the Laurens-Anderson study area. Ten Savannah River phase sites and seven Otarre phase sites were identified. Quartz tools, which were found in overwhelming abundance at earlier sites, consisted only of about 57% of the Savannah River assemblage. Other materials included "silicates, volcanic slate/argillite, and unknown igneous/metamorphic" (Goodyear et al. 1979:207). The Otarre assemblage reflected a trend away from igneous/metamorphic rock, with a concentration of quartz and siliceous materials.

[6] Since the vegetation was homogeneous and there were no concentrations of resources people moved from place to place foraging rather than settling near or in these resource concentrations.

[7] According to Oliver (1981) the Otarre type is contemporaneous with the Savannah River stemmed type and fall within the category of "Small Savannah River Stemmed".

The incorporation of more types of lithic raw material as well as the fact that Late Archaic diagnostics are much fewer than Middle Archaic diagnostic artifacts indicates a sharp decrease in residential mobility.

Many of these Late Archaic sites produced fire cracked rock which was found on major ridges between watersheds. Goodyear et al. (1979:209-210) found that the inter-riverine picture of the Late Archaic contrasted quite sharply with river sites. Artifacts at riverine sites were diverse and included steatite vessels and netsinkers[8], ground stone axes, rock mortars and handstones, atlatl weights, and chipped stone drills. In the upland sites, the assemblage consists almost entirely of chipped stone bifaces and debitage. Purrington (1983) also noted this trend for the mountain region of North Carolina. At the Savannah River Plant, both riverine and upland sites contained a full range of tools, but no architectural features have been located.

Soapstone became an important lithic resource in the Late Archaic period for manufacturing of cooking vessels, and a number of soapstone quarries have been identified in Spartanburg and Cherokee counties (Ferguson 1976). Unfortunately, little is known about patterns in local soapstone use, although Elliott (1981) argues that soapstone exchange in the upcountry was facilitated by local reciprocal relationships. Soapstone was also probably used as a mechanism to maintain long distance relationships through long distance trade. Sassaman et al. state that:

> [c]ompared to sites in the upper and lower reaches of the Coastal Plain, a higher proportion of sites in the middle portion of the plain contain soapstone artifacts. This may indicate that soapstone distributions were not merely the result of distance-decay from sources, but were much more dependent on the social composition of exchange alliances (Sassaman et al. 1988:90).

For the Late Archaic, John White (1982) also applied a riverine/inter-riverine dichotomy. He demonstrated that riverine sites were much more dense and diverse than inter-riverine sites, but also identified the existence of diverse and sometimes dense assemblages at upland sites. He argued that they were habitation camps during periods of seasonal dispersal from riverine aggregation bases.

Although Steven Savage (1989) has proposed a "Late Archaic Landscape" model, a number of researchers (i.e. Anderson 1989a; Cable 1994; and Rafferty 1992) have noted that his study was seriously flawed by the "misappropriation of data from the Richard B. Russell survey" (Sassaman and Anderson 1994:142). The purpose of the work was to attempt to apply the locational methods of GIS to the analysis of Late Archaic social systems in the Upper Savannah River Valley. However, he only chose to use early intensive survey data and ignored subsequent data from testing and excavation. In addition, he chose to ignore problems such as multicomponentcy and representativeness (Cable 1994). Although it was considered a noteworthy study since it was the first to use Geographic Information Systems (GIS) for the analysis of settlement distribution, "the errors detract from the potential value of Savage's approach" (Sassaman and Anderson 1994:142).

Woodland Period

The Woodland period begins, by definition, with the introduction of fired clay

[8] Sassaman (1991:87-88) states that "perforated and grooved objects are common items in Late Archaic assemblages of the Savannah River Valley. Both the grooved and perforated varieties have been referred to as "netsinkers", but the more common perforated slave was apparently used as a cooking stone."

pottery about 2000 B.C. along the South Carolina coast and much later in the Carolina Piedmont, about 500 B.C. Regardless, the period from 2000 to 500 B.C. was a period of tremendous change.

The subsistence economy during this period was based primarily on deer hunting and fishing, with supplemental inclusions of small mammals, birds, reptiles, and shellfish. Various calculations of the probable yield of deer, fish, and other food sources identified from some coastal sites indicate that sedentary life was not only possible, but probable. Further inland it seems likely that many Native American groups continued the previous established patterns of band mobility. These frequent moves would allow the groups to take advantage of various seasonal resources, such as shad and sturgeon in the spring, nut masts in the fall, and turkeys during the winter.

Early Woodland

Brooks and Hanson (1987) noted significant changes in the density and distribution of upland tributary sites during the Woodland period in the Steel Creek area of the Savannah River Plant. Brooks proposed that as tributary associated habitats became more productive with floodplain maturation that upland tributary terraces became areas of more permanent occupation. For the Savannah River area, the data suggested to Brooks that annual settlement ranges in the Early Woodland period were restricted to tributary watersheds (Sassaman et al. 1990:315).

Artifacts typical of the Early Woodland in the Upper Piedmont consist of Dunlap and Swannanoa ceramics (similar to the Kellogg focus of Northern Georgia). The Dunlap series is characterized by a medium to coarse sand paste, fabric impressions, and vessels with a simple jar or cup form. The Swannanoa ceramics, with heavy crushed quartz temper, are cord marked or fabric impressed conidial jars and simple bowls. Other surface treatments consist of simple stamping, check stamping, and smoothed plain (Keel 1976:230). Early Woodland projectile point types consist of Savannah River Stemmed (and its variants) and Swannanoa Stemmed.

Land use during the Early Woodland period in some areas of the Piedmont suggests extensive use of the inter-riverine zone. Two sites (one in Greenville County and one in Laurens County) contained dense remains and were located on the south face of a slope adjacent to springs. Goodyear et al. (1979:230) suggest that these sites "reflect a fall-winter occupation period with subsistence activities primarily related to nut gathering and deer hunting. If these two sites in fact represent fall-winter base camps it would represent a strong break with previous Archaic systems and their settlement strategies for exploiting inter-riverine biotic resources". Based on these previous studies, Early Woodland sites are most likely to be found adjacent to springs or the upland terraces of tributaries.

Middle Woodland

The Middle Woodland period is found "virtually lacking" in the Laurens-Anderson inter-riverine zone. One densely occupied site in adjacent Laurens County was found in an unusually large floodplain of a rank 2 stream. Goodyear et al. state that:

> [g]iven the habitation like character of this site, plus the large number of simple stamped bearing floodplain sites along larger streams such as the Reedy River, it is tempting to see agriculture playing a role in the apparent re-orientation to flood-plain environments during the middle Woodland period in the Piedmont environment. In this regard, the middle Woodland period sites and their locations would seem to presage the late prehistoric Mississippian period pattern during the latter, where

> large agriculturally related villages were constructed along fertile stretches of floodplain (Goodyear et al. 1979:230-231).

This new pattern is also reflected in the Savannah River Valley where Savannah terrace sites at the mouth of Upper Three Runs Creek were being occupied again for intensive settlement. Midden accumulations at several sites indicate long term occupation or repeated occupations of these sites by relatively large groups (Sassaman et al. 1990:315).

Pottery typical of the Middle Woodland in the Upper Piedmont consists of the Pigeon and Cartersville series. Pigeon is quartz tempered with surface treatments of check stamping, simple stamping, and brushing. The Cartersville type is characterized by sand or grit paste with the primary surface treatment being cordmarking, although there are also check stamped and simple stamped varieties. The Cartersville series is thought to be closely related to the Deptford series on the Coast. Anderson and Schuldenrein (1985:720) suggest that Cartersville continues well into the Late Woodland period. Projectile points typically found in association with this pottery are the Pigeon Side Notched and Corner Notched types.

Testing at 38LU107 (Wood and Gresham 1981) demonstrated that one of the most intensive occupations of this multicomponent site was during the Middle Woodland period. This site is located on a knoll adjacent to South Rabon Creek, near its confluence with North Rabon Creek. A number of features were encountered including a large, deep pit, post holes, and a stone hearth. This indicated that even sites on plowed knolls can and do produce subsurface features.

Since the Middle Woodland period reflects a new pattern of settlement, questions regarding how quickly this change occurred and how the transition to horticulture affected their material culture should be examined. Clearly, this change did not occur over night and perhaps examination of radiocarbon dates from upland and riverine sites during this transition period will begin to clarify questions regarding change in lifeways.

Late Woodland

Small triangular points which are generally believed to be diagnostic of the Late Woodland and Mississippian periods consisted of 12 examples in the Laurens-Anderson study. Ten of these were manufactured from quartz while the other two where manufactured from either rhyolite or a Piedmont silicate. These projectile points were typed as "Mississippian triangulars" and included what they believed were Uwharrie or Pee Dee Triangular types and the Hamilton Incurvate Triangular type. Napier and Connestee Series pottery are typical Late Woodland types for the Upper Piedmont region. The Napier series is a fine sand tempered ware with fine complicated stamped designs. The Connestee series is a thin walled sand tempered ware with brushed or simple stamped surface decorations. There are also cordmarked, check stamped, fabric impressed, and plain varieties (Trinkley 1990).

According to Sassaman et al. (1990:317) Late Woodland occupations in the Savannah River Valley consisted of small habitation sites along all available terrace locations of both tributaries and the Savannah River. This increasing use of low-lying terraces suggests the increased exploitation of floodplain habitats, perhaps including maize agriculture, although no direct evidence has yet been found at the Savannah River Site.

Keel (1976) reported on the Garden Creek Mound No. 3 which contained a dominant Connestee component based on George Heye's 1915 examination of the mound. Later work at Garden Creek Mound No. 2 examined a portion of a village with a large quantity of Connestee remains. A number of post holes were exposed revealing one discernable square house with rounded corners measuring about 19 by 19 feet in

outline. In addition, there were a number refuse pits and hearths. The hearths included both rock filled and surface hearths. There were also a number of burial pits (see Keel 1976:99). It is likely that Connestee sites in the Upper Piedmont will contain similar features.

Mississippian Period

The South Appalachian Mississippian period, from about A.D. 1100 to A.D. 1640 is the most elaborate level of culture attained by the native inhabitants and is followed by cultural disintegration brought about largely by European disease.[9] The period is characterized by complicated stamped pottery, complex social organization, agriculture, and the construction of temple mounds and ceremonial centers.

In the Upper Piedmont, Mississippian pottery includes the Pisgah and Qualla series. Pisgah ceramics are tempered with unmodified river sand, although some earlier examples contain both river sand and crushed quartz. It is decorated with complicated stamping, check stamping and ladder-like rectilinear patterns (Dickens 1970; Holden 1966). It should be noted that the Qualla series extends well into the historic period (ca.1500-1908) and is characterized by complicated stamping and bold incising. Other types described by Egloff (1967) include burnished, plain, check stamped, cord marked, and corncob impressed. At Tuckasegee brushed examples were also identified (Keel 1976). Other artifacts associated with the Mississippian period include triangular projectile points, flake scrapers, microtools, gravers, perforators, drill, ground stone objects (celts, pipes, and discoidals), and worked shell and mica (Keel 1976).

Very little evidence of Mississippian period occupation was found in the Laurens-Anderson inter-riverine survey area which is not surprising given the focus on riverine resources during this time period. Very little evidence of Mississippian occupation has been documented at the Savannah River Plant and no formal settlement-subsistence model has been created for this area (Sassaman et al. 1990:317). However, Anderson (1994) has provided a detailed examination of evidence for political change at Mississippian sites in the Savannah River Valley and should be consulted for more information.

Excavations at large Mississippian sites in the Upper Piedmont include work at the I.C. Few site which was examined as a part of the Keowee-Toxaway Reservoir project sponsored by Duke Power Company (Grange 1972). Simpson's Field (38AN8) on the Savannah River was also investigated during the Richard B. Russell Reservoir studies (Wood et al. 1986). Work at the Chauga site (38OC47) in nearby Oconee County evidenced occupation in the Early and Late Mississippian period. Ten stages of mound building were found at the site along with burials and palisades. There is evidence for increasing impoverishment of the residents through time, since burials associated with the latest phases of mound building contained fewer grave goods than earlier phases in both the occupation during the Early Mississippian and the Late Mississippian (Anderson 1994:303-305). Homes Hogue Wilson (1986) examined burials from the Warren Wilson site in western North Carolina and provided some preliminary conclusions regarding social structure based on location of burials according to age and sex. For instance, she found more males than females were buried under structure floors. These males included primarily those under 25 or over 35 years old. She also found that individuals buried inside of structures were more likely to have burial goods than those buried in public areas. Burial feature types included pit burials, side-chambered burials, and central-chambered burials. Studies such as this can give great insight into the social organization of prehistoric societies.

[9] Small pox was a major cause of death to a large number of Native Americans during the historic period. The smallpox epidemics of 1734 and 1783 reportedly killed half of the Cherokee population (Hatley 1993).

The largest amount of regional work has taken place in the North Carolina mountains at sites such as Tuckasegee, Garden Creek, and Warren Wilson. At Tuckasegee a possible town house was uncovered measuring about 23 feet in diameter with a central hearth (Keel 1976). At Warren Wilson several roughly square structures were uncovered and they all measured on the average about 21 feet square. Burials were common inside of these houses and pit features were abundant. Artifacts at the Warren Wilson site included ceramics from the Swannanoa series up through the Pisgah series. (Dickens 1970).

Historic Overview

Although exploration of the Savannah River Valley began as early as the sixteenth century (DePratter 1989), substantial settlement of the area did not begin until after the Yamassee Indian War (1715-1718). By the mid-eighteenth century, cattle ranchers and subsistence farmers cleared land and established small farms and plantations (Kovacik and Winberry 1987:69-71), and by the eve of the American Revolution cattle ranching was well established in the area (Brooks 1981).

After the initial settlements of the 1750s the white population of the Up Country did not increase significantly until 1761, with the expulsion of the Native American population at the end of the Cherokee War. This created a second wave of immigration and settlement, spearheaded by farmers from the northern colonies of North Carolina, Virginia, Maryland, and Pennsylvania. These settlers developed a self-sufficient economy based on planting flax, tobacco, corn, wheat, and oats, and raising cattle and hogs for their own use. Slaves were relatively uncommon until the early 1800s.

In this early period of European settlement there was little connection with the legal authorities on the coast (centered in Charleston), leaving the Up Country largely autonomous. This led to the Regulator Movement of the 1760s, a vigilante organization which attempted to maintain order and provide security. By the eve of the Revolution, two-thirds of the South Carolina population lived in the Up Country.

By the onset of the American Revolution, the population of the Up Country was quite diverse in its ethnic, religious, and political backgrounds. These differences seemed to localize the hostilities between Whigs and Tories living side by side (Wallace 1958).

Probably the most significant Revolutionary War activity in Greenwood County was at Ninety-Six, a British stronghold in the Up Country. The earthen star-shaped fort commanded by Lieutenant-Colonel John H. Cruger fell under siege by troops under the command of General Nathaniel Greene on June 18, 1781. The attempt to capture the fort failed, and Greene retreated toward Winnsboro. Later the British abandoned the fort because they were expecting the French at Beaufort.

The evacuation of Ninety-Six rendered the British hold on the middle and back country precarious and unprofitable. Partisans cut communications, seized supplies, and captured abandoned posts. No attempt was made to re-establish a British hold in the back country (Wallace 1951:317).

After the American Revolution, the village of Cambridge grew up on the site of the Ninety Six fortification. It thrived as a seat of the District Court and as an upcountry trading center until the first decade of the nineteenth century when it began to decline and finally passed out of existence in the mid-nineteenth century (Baker 1972:3).

The study tract was historically part of the Abbeville District (created by the Legislature in 1785 from the old Ninety Six District). In 1826 Mills indicated that:

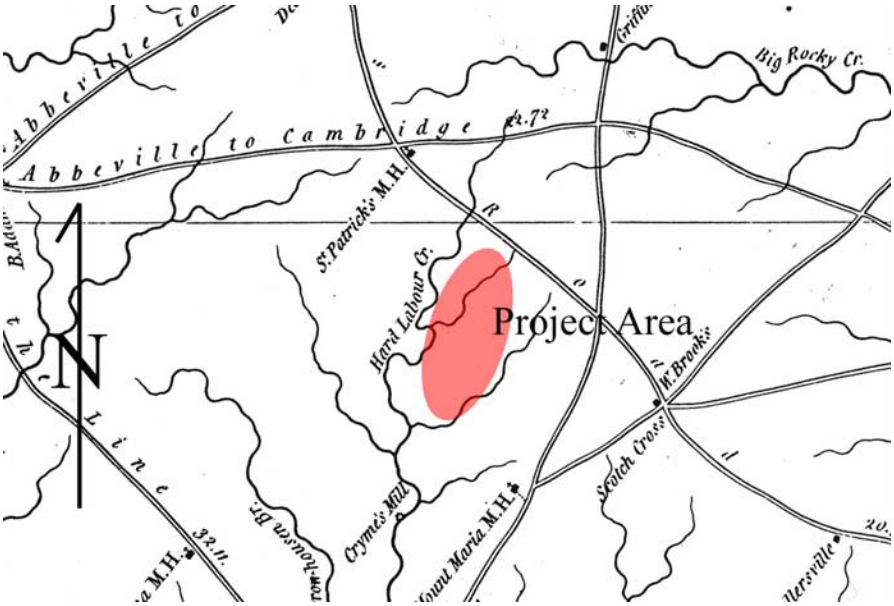

Figure 11. Mills *Atlas* showing the project area in 1820.

[t]he first important settlement in this district occurred as early as the year 1756, when Patrick Calhoun, with four families of his friends, settled at Long Cane Creek. On his arrival, there were only two families of white settlers, one named Gowdy, the other Edwards, in that northwestern extremity of the province. (Mills 1972 [1826]:348).

The 1820 *Mills' Atlas* plan of Abbeville District (Figure 11) fails to reveal any subscribers in the project area. Hard Labor Creek is clearly shown

Prior to the introduction of the cotton gin in the late eighteenth century, the area experienced only slow growth and moderate changes in its society and economy. Initially an area of small, independent and diversified farmers, the shifting focus on cotton caused dramatic changes. It also began to create clear differences between what would become Anderson and Abbeville counties. This is perhaps best illustrated by looking at the changing complexion of the population. In 1800 only 22% of Abbeville's population, then at about 13,500, was enslaved. By 1810 this figure climbs to 32%. By 1830 nearly half (47%) of Abbeville's 22,906 citizens were African American slaves. At the 1850 census Abbeville reported a population of 32,318 individuals, of whom 19,262 (or 60%) were slaves.

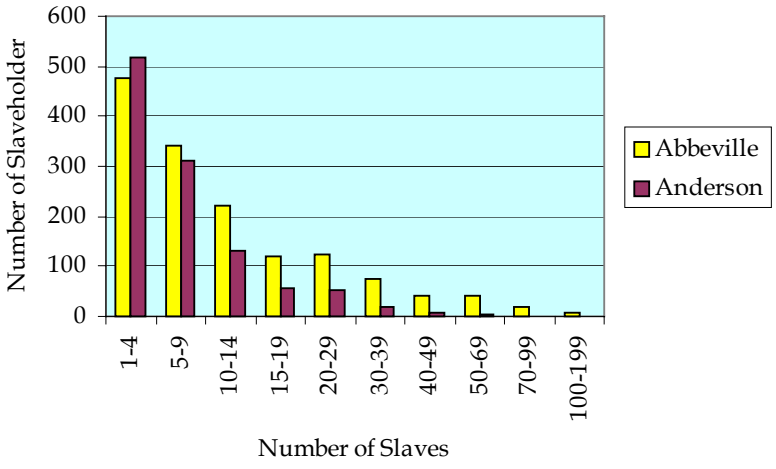

Figure 12. Comparison of slaves held by slaveholders in Abbeville and Anderson districts in 1860.

In contrast, the Anderson area never

exhibited this level of slave ownership. In 1810 the Pendleton District (which included Anderson) had a population of 22,897, of whom only 3,485 (or 15%) were slaves. This percentage climbed to only 26% (4,427 of 17,169) in 1830. By 1850 there was a population of 21,475 in Anderson, with 7,514 (or only 35%) being African American slaves.

Figure 12 reveals the difference in slave ownership between Abbeville and Anderson districts by the eve of the Civil War. Abbeville had slowly become characterized by larger cotton plantations, a reliance on slavery, and a one crop system eventually ruinous to the soil. In contrast, Anderson consisted of smaller farms and a somewhat more diversified farming economy.

In 1850 Abbeville's 1,814 farms (with an average size of 351 acres) produced 27,192 bales of cotton, compared to only 6,670 bales produced by the 1,986 farms (with an average of 232 acres) in Anderson County. Perhaps because the average per farm acreage was smaller in Anderson, these farms tended have slightly more acreage (nearly 39%) in improved lands, while on Abbeville's larger holdings only an average of a third of the acreage was improved for cultivation. Perhaps more telling, the combined farm value in Abbeville was nearly double that of Anderson ($4,740,923 compared to $2,399,120).

While some of this difference in the prosperity of Abbeville and Anderson counties may have to do with their early settlement (Anderson was not really available for settlement until the Cherokees ceded their lands in 1776), far more has to do with the history of slavery. Edgar (1998:286) observes that the free per capita wealth of Abbeville in 1860 was $47,771 (in 1996$), while in Anderson the per capita wealth of freeholders was only $22,114. In Abbeville 64.4% of the population was African American, while in Anderson the percentage of African American slaves was only 37.5%. Slavery brought wealth, yet wealth was necessary to acquire slaves.

There were other signs of the differing wealth and prosperity. In Abbeville District there were nine libraries with 6,658 volumes, while there were no libraries in Anderson County. And while there were 48 public schools in Abbeville District with a total annual income of over $16,000, the 39 schools in Anderson County seem to have been barely supported with an income of just under $6,500.

In 1850, the Anderson farms, however, produced 240,277 pounds of butter and cheese, ranking just behind Abbeville County. It also produced 120,382 bushels of wheat, making it the second largest producer in the state, just behind Laurens. While relatively inconsequential compared to the coastal area, Anderson also produced nearly a million pounds of rice (compared to only 7,180 pounds in Abbeville County). Anderson was also producing far more tobacco, 18,540 pounds in 1850, than was Abbeville (where only 4,455 pounds were reported). In fact, Anderson ranked second in tobacco production, just behind Pickens County. Anderson farms also produced more bushels of peas and sweet potatoes than Abbeville, as well as more wine, cheese and flax. Home production valued $86,795 in Anderson, compared to only $71,774 in Abbeville, although statewide they rank second and third.

Co-existing with agriculture, Anderson also supported a thriving industry which ranked fifth in annual production behind Charleston, Edgefield, Laurens, and Richland counties. Although Abbeville ranked seventh in production, it had double the invested capital.

Westward emigration of people lured by the expanding cotton kingdom caused increased damage to the region's soils. Mills commented that, "the system of cultivation now pursued is destructive to such land, as no provision is made to prevent the washing" (Mills 1972 [1826]:357). Cotton was encouraged by the Greenville and Columbia Railroad opening a branch line running from Hodges to Abbeville in the 1850s. The railroad, linking the up country to Columbia and

Charleston exported Abbeville's cotton and imported the necessary subsistence crops to feed the county (Baker 1931:13). Another branch line linked the main route (running from Newberry to Saluda up to Greenville) with Anderson and Pendleton about the same time, helping to unify the state.

The impact of these early railroads, however, was mixed. Edgar (1998:283) reports that property values in Anderson increased fourfold between 1848 and 1860, all because the town became a stop on the Greenville and Columbia Railroad. Yet Nelson (1999:12) suggests that most followed old trading paths, generating few new villages and that often the railroad were enormously unsuccessful. While farmers needed outlets for their cotton, they bought little from outside their region. With all of the traffic flowing in one direction, most railroads found backhaul a serious economic drain. It seems unlikely that the produce brought into the region was a significant source of income. Thus, very few new towns were created along the rail lines — and none that we have identified in the project area.

Cotton also spread on the sweat of African American slaves, and caused increasing political polarization as planters more aggressively defended slavery in the first half of the nineteenth century. This lead to almost unanimous citizen support in the area for nullification and secession in Abbeville.

The Civil War necessitates that the Confederate states become more self sufficient and one step toward that goal was the production of more subsistence crops, even if this meant a reduction in the planting of cotton. Although cotton production was reduced (at least partially by the blockade making it difficult or impossible to export to England), the Governor of South Carolina was still pleading with planters as late as 1863 to reduce the acreage of cotton and increase the production of food stuffs (*The Abbeville Press*, March 20, 1863). When this failed to have the desired affect, the Legislature passed a law limiting cotton production to three acres per full hand. This, however, seems only to have resulted in planters dumping what fertilizer was available on their cotton lands, in an effort to maximize the yield of the limited acreage — at the expense of subsistence crops. In response, the Legislature reduced the allowed acreage to one acre per hand, although it is unclear if this action had any meaningful result (Baker 1931:15-16).

In spite of these efforts it seems that the Abbeville area (as well as much of the state) was always on the "verge of starvation." One Due West resident wrote, "have only as yet got 5 bu. corn and 1 bbl. of flour. I don't know what I am going to do but my trust is still in a kind providence" (quoted in Baker 1931:17). Another significant problem was that on many of the subsistence farms, especially those with few or no slaves, there were no able-bodied men to plant, tend, and harvest crops. Even those planters with slaves began to feel pressure, as the Confederate government began demanding that slaves be provided for the construction of coastal defenses. The situation in some areas was so bad that the Legislature voted for funds to help relieve the suffering on the farm-front.

There is some indication that the local planters began to once again fear slave rebellion. One white, "who dared interfere with their property" was hung in Abbeville and the district passed additional laws regulating where slaves might live and forbidding them to enter town without special permission (Baker 1931:20).

The Civil War had little military impact on Abbeville District and no significant battles were fought in the Up County. It did, however, change the region's history, destroying the basis of its wealth and creating in its place a system of tenancy — the hiring of farm laborers for a portion of the crop, a fixed amount of money, or both.

Although the Civil War disrupted labor supply, it also forced up country planters to re-examine the crops they planted. Immediately after

the Civil War cotton prices peaked, causing many Southerners to plant cotton again in the hope of recouping losses from the War. In 1867 there was a corn famine which caused considerable concern in the region. Corn was brought in from New York and Kentucky as part of the relief effort, although the region's farmers were not convinced to improve production techniques. In 1868 the caterpillar was particularly prevalent in Abbeville County and a late frost damaged a variety of crops, especially the cotton, in 1869 (Baker 1931:27-29). Coupled with long-term falling cotton prices, the region's farmers never really recovered from the devastating economic effects of the Civil War.

Gradually the region's farmers began to turn to oats as a forage crop, although the commitment in Abbeville was short-lived. In 1860, Abbeville produced over 96,000 bushels of oats, but 1900 the figure had fallen to 70,460 bushels. Only in Anderson, where there continued to be a focus on small farms and self-sufficiency, did the production of oats dramatically increase — from 28,761 bushels in 1860 to 86,690 in 1900.

In was also during this period that tobacco production fell in Abbeville, as it migrated eastward into the Pee Dee region. In 1900, for example, Abbeville reported less than one acre in tobacco, while Darlington County boasted nearly 7,000 acres and Marion over 7,300 acres. This early decline in tobacco production undoubtedly accounts for the absence of tobacco barns in the project area.

The single largest problem across the South, however, was labor. While some freedmen stayed on to work, others, apparently many others, left. An Englishman traveling through the South immediately after the war remarked that, "Thirty-seven thousand negroes, according to newspaper estimates, have left South Carolina already, traveling west" (quoted in Orser 1988:49).

The hiring of freedmen began immediately after the war, with variable results. The Freedmen's Bureau attempted to establish a system of wage labor, but the effort was largely tempered by the enactment of the Black Codes by the South Carolina Legislature in September 1865. These Codes allowed nominal freedom, while establishing a new kind of slavery, severely restricting the rights and freedoms of the black majority (see Orser 1988:50). Added to the Codes were oppressive contracts which reinforced the power of the plantation owner and degraded the freedom of the Blacks. Many white planters, including those in Abbeville County, formed "Democratic Clubs," designed to counter the "radical" influence (Baker 1931:36). Members of these clubs resolved not to hire "radicals," or blacks associated with radical politics.

The freedmen found power, however, in their ability to break their contracts and move to a new plantation, beginning a new contract. With the initially high price of cotton and the scarcity of labor, this mechanism caused tremendous agitation to the plantation owners.

Gradually owners turned away from wage labor contracts, at least partially because of the scarcity of money, but also because of the prevailing belief among whites that blacks were so lazy that with money in their pockets they would not work (Baker 1931:38). In its place two kinds of tenancy — sharecropping and renting — developed. While very different, both succeeded in making land ownership very difficult, if not impossible, for the vast majority of Blacks.

Sharecropping required the tenant to pay his landlord part of the crop produced, while renting required that he pay a fixed rent in either crops or money. In sharecropping the tenant supplied the labor and one-half of the fertilizer, the landlord supplied everything else — land, house, tools, work animals, animal feed, wood for fuel, and the other half of the needed fertilizer. In return the landlord received half of the crop at harvest. This system became known as "working on halves," and the tenants as "half hands," or "half tenants."

In share-renting, the landlord supplied the land, housing, and either one-quarter or one-third of the fertilizer costs. The tenant supplied the labor, animals, animal feed, tools, seed, and the remainder of the fertilizer. At harvest the crop was divided in proportion to the amount of fertilizer that each party supplied. A number of variations on this occurred, one of the most common being "third and fourth," where the landlord received one-fourth of the cotton crop and one-third of all other crops. In cash-renting the landlord provided the land and housing, with the renter providing everything else and paying a fixed per-acre rent in cash.

Tenancy took a variety of forms. Baker, for example, describes the system used by Col. D. Wyatt Aiken of Abbeville. He leased his fields to freedmen, typically in 20 acre increments. With the tenant providing a mule, the rent was 1,600 pounds of lint cotton. An extra 400 pounds were required if Aiken provided the mule (Baker 1931:39).

The 1870s, however, were not simply hard years for Southern planters and African Americans. By 1873 the entire country had plunged into a severe economic depression. This distracted Congress, furthered the anger of Southerners, and caused the Northern public to retreat from Reconstruction (Foner and Mahoney 1995:128). Violence in South Carolina increased, flaunting the belief that there was little to fear from Washington. In 1876 Wade Hampton, one of the state's most popular Confederate veterans (at least among white South Carolinians), was nominated for Governor. Hampton's supporter's, in red shirts and formed into "rifle clubs," disrupted Republican gatherings, drove freedmen from their homes, and made it known that they intended to carry the election. One planter remarked that they would win, even "if we have to wade in blood knee-deep" (quoted in Foner and Mahoney 1995:131).

Not only did Hampton win, but these events also affected the national Tilden-Hayes election. The election was so close that it was decided by Congress — in favor of Republican Hayes. Nevertheless, in order to ensure inauguration, the "Bargain of 1877" was struck where by Hayes would recognize Democratic control of the Southern states, including South Carolina, and would remove the last of the federal troops. Thus, Reconstruction was officially dead in the South. Republicans did not even offer a gubernatorial candidate in 1878. Moreover, the federal government stood by silently as Southern states such as South Carolina (in 1895) passed laws stripping African Americans of their rights, including their right to vote. This formalized the ad hoc measures of the black codes developed in the 1870s (Zuckek 1996). Wallace (1951:600) notes that Abbeville was an area of considerable Klan activity, although Klan violence seems to have been centered in nearby Newberry and Union counties.

The attitude of white planters (as well as at least some difference in the attitude of those associated with large plantations as opposed to small farms) can be gleaned from a publication chronicling the "progress" of South Carolina since the Civil War. A series of similar questions were put to representatives from every county. To the question, "Efficiency of colored labor," Abbeville County responded:

> Colored labor is regarded as somewhat more efficient than five years ago. This is owing to the fact that it is better controlled since the negro has entirely withdrawn from politics. The negro does not work very willingly, and renders rather poor service unless closely looked after; but when working for himself he works better than for hire unless closely looked after (Anonymous 1884).

In the 1880s nearby Anderson reported

two cotton mills (one at Pelzer on the Saluda and another at Pendleton on Twenty-Three Mile Creek). Abbeville reported no cotton mills. Cotton was, however, being produced in large amounts and it was estimated that the average cost of producing merchantable cotton was about eight cents a pound and 40 dollars to bale 500 pounds. Anderson boasted 275 cotton gins, while Abbeville had about 100 gins which moved from point to point as needed. Although a few horse powered gins were still being used, the bulk were by this time steam operated.

It appears that a large portion of the manufacturing in the region was milling grain or producing lumber and turpentine. Of the 70 manufacturing establishments in Abbeville, there were 25 flour mills, seven grist mills, and 21 lumber mills. Other manufacturers included carriage and wagon factories, brick making and printing establishments (Anonymous 1884).

In 1897 Greenwood County was created from adjacent Abbeville and Edgefield Counties, with the project area within Abbeville.

Table 1.
Cotton Mills in 1907

County	Location	Name	Date Organized	Spindles	Looms	Yearly Product	Employees	Mill Population
Abbeville	Abbeville	Abbeville Cotton Mill	1896	28,800	940	$650,000	375	750
Greenwood	Greenwood	Greenwood Mills	1889	22,000	684	$400,000	350	500
	Greenwood	Grendel Mills	1897	33,152	834	$750,000	400	750
	Ninety-Six	Ninety-Six Mills	1902	20,608	474	$285,000	150	300
	Ware Shoals	Ware Shoals Mill	1902	50,000	1,400	$1,500,500	600	2,500

Tenancy continued to be a significant feature of the region. By 1900 there were 4,574 farms in Abbeville County and the average farm size was 76.3 acres. In newly created Greenwood County there were 3,719 farms, with an average size of 75.3 acres. The difference is the result of Abbeville's 730 square miles to Greenwood's 530. Of these farms, in Greenwood 2,694 or 72.4%, were operated by tenants, while in Abbeville 74.1% of the farms (3,389) were operated by tenants. Even the proportion of African American tenants was almost the same, with 63.4% in Abbeville and 62.8% in Greenwood.

When production is compared, the two counties remain very similar. Greenwood produced 21,888 bales of cotton on 70,601 acres, while Abbeville produced 28,121 bales on 94,001 acres (for both production was just under a third of a bale per acre).

While the agricultural production of Greenwood and Abbeville remained close during the first decade of the twentieth century, Greenwood quickly took a lead in industrial production. By 1907 Greenwood had four cotton mills to Abbeville's one (Table 1) (State Department of Agriculture, Commerce and Immigration 1907:571). What is perhaps most important about the rise of these mills is that they began to siphon the population off the farms. By 1907 about 12.5% of Greenwood's population was living not in the agrarian countryside, but in a mill village.

Several things happened in the twentieth century that profoundly affect Greenwood and surrounding counties. In terms of agriculture, there was first the cotton panic of 1914, when the price was depressed to the lowest point most could remember — brought on an enormous crop (Wallace 1951:664). Then a long agricultural

Table 2.
Changes in Greenwood Farms Between 1910 and 1940

Date	# farms	Average Acres	Average Improved Acres	Average Value
1910	4,493	64.3	33.5	$2,102
1920	4,005	54.8	32.0	$5,188
1930	3,084	73.0	35.0	$2,189
1940	2,099	97.1	38.8	$2,512

depression began in 1921 (Wallace 1951:688). Edgar (1998:481) reports cotton prices fell precipitously from around 40¢ a pound to about 13½¢, while tobacco declined from 40¢ to just over 21¢. Debts, based on the inflated value of land and produce, began piling up to extraordinary levels. Edgar observes that, "farmland and buildings had lost more than on-half their value. One-third of the state's farms were mortgaged, and 70 percent of the state's farmers survived on borrowed money" (Edgar 1998:485).

The situation in Greenwood was even a little worse with slightly over 36% of the farms mortgaged and the average farm debt was $1,836. In Abbeville County 41.8% of the farms were mortgaged, although the average debt was only $1,681.

South Carolina never really recovered from these earlier problems before the stock market crash of 1929 which ushered in the Great Depression. Between 1921 and 1933, 34 national banks and 283 state banks were forced to close their doors (Wallace 1951:688). This represented about two-fifths of the national banks and nearly three-quarters of the state banks.

Some indication of agriculture collapse can be seen in Table 2. The average farm size tended to decrease as part of the World War I crash, stabilize about 1930, at least partially due to government programs, and rebound by 1940 with economic recovery. One part of the government action to encourage agricultural recovery was an effort to limit the acreage in farms, especially on farms with limited economic potential. This is reflected by the drop in improved acres. But perhaps most revealing of the hard times is the decline in average value. In Greenwood County the farm price declined by nearly 43% in just the one decade between 1920 and 1930. There was a modest increase in value between 1930 and 1940, but not nearly enough to help farmers recover from the earlier losses.

Cotton acreage, as well as production, declined from 1920 to 1930. The 1920 acres of 70,102 declined to 40,740 acres in 1930, while production declined from 30,910 bales to nearly half – 15,725. The only bright note was that the bales per acre increased from 2.3 to 2.6 – a very modest increase that probably did little to help the dire situation.

The 1930 census helps us understand something concerning the daily lives of Greenwood farmers as well. Of the 3,084 farms, only 104 (3.4%) had a telephone, only 115 (3.7%) had piped interior water and even fewer – 80 or 2.6% -- had interior bathrooms. Only 141 (4.6%) of the County's farms had electricity. There were also only 1,077 automobiles on the farms – and nearly 52% of the farms were still situated on unimproved dirt roads that were probably impassable to automobiles much of the time anyway. Farms were also still largely cultivated using mules – there were only 79 tractors in the county.

On the other hand, it seems that times weren't nearly as hard for mill operators. In places like Anderson these operators were typically leading members of the business and profession community, reflecting a home-grown bourgeois elite. Carlton observes that in nearby Anderson County:

> Six major corporations were organized between 1899 and 1904 to build cotton factories in or about Anderson: the forty-three seats on their boards were held by twenty-nine individuals, all of

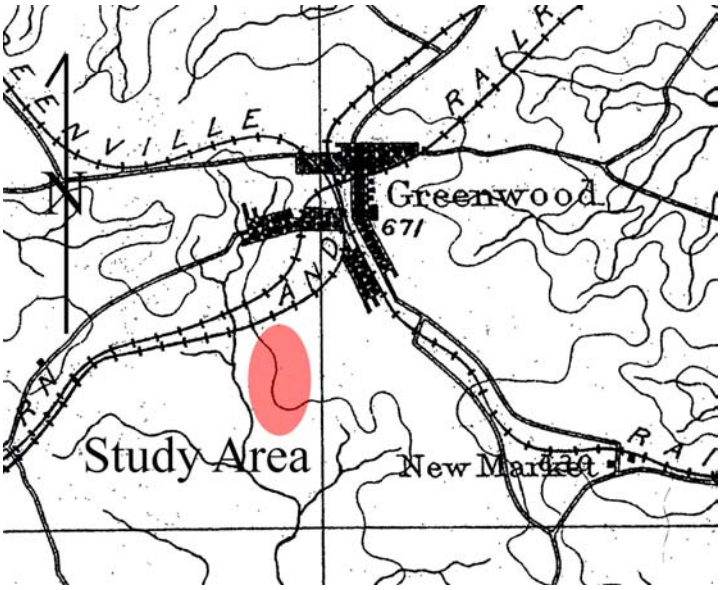

Figure 13. Portion of the 1919 USGS Abbeville topographic map showing the project area.

whom have been identified. Twenty-one of the directors lived in or near Anderson; of these, eleven were merchants, three bankers, three lawyers, one a physician and druggist, one a cottonseed products manufacturer, and one a career textile executive (Carlton 1982:50-51).

By 1940 the value of South Carolina manufactures, $446,000,000, was over three and a half times the value of the crops raised by the state's farmers. In addition, we see a steady growth through the first quarter of the twentieth century, so that by 1931 there were 239 mills in the state.

Abbeville, Anderson, and Greenwood continued to boast of 24 mills with nearly 848,000 spindles and over 17,000 looms in 1915. Nevertheless, the number of mill hands employed had dropped slightly, although the proportion of the population employed by mills remained fairly steady (Watson 1916).

Wallace (1951:689) observed that the mills were a "God-send to the suffering small farmers of the early 1890's and later." Clearly this is a belief that depends on one's perspective. The mills did provide employment, albeit for pitiful wages and oppressive working conditions. It was in Anderson County, in fact, where striking mill workers, supported by Anderson sheriff Joe M.H. Ashley, were eventually evicted from their mill houses by National Guardsmen sent in by Governor Manning in 1916 (Carlton 1982:253).

It is also important to understand the mills also felt the down-swings in South Carolina's economy. With the agricultural depression of the 1920s, textile profits plummeted. With the decline in profits, wages also declined, often being reduced from record highs of around $24/week to about $15/week. This resulted in unprecedented suffering. Deaths in South Carolina mill villages increased by 20% between 1920 and 1921 (Beardsley 1987:60).

The study area, remained rural. Figures 13 and 14 illustrates maps from 1919 and 1938 – both showing no development in the project area.

African American had begun migrating out of South Carolina during the nineteenth century, largely in response to the oppressive political and social climate. This exodus continued through at least the mid-twentieth century. Figure 15 clearly reveals the decline in both African American farmers and general population – while the white population in Greenwood steadily increased.

Tract Specific History

The history of the parcel was taken back only to the early twentieth century since there was no evidence of earlier occupation. The property was originally part of what was known as the

Blake Homestead. Around the time of Greenwood's creation, the property had been acquired by the Wells family and in 1921 150 acres – comprising the bulk of the study tract – was sold by W.J. Wells to J.S. Ellenberg and C.L. Wells (Greenwood County Clerk of Court, DB 37, pg. 413). The parcel at that time was known as the "Wells Homestead Tract" and was bounded to the north by Edgar Blake, Pierce May, and S.B. Marshall; east by Wells Street; south by R.R. Tolbert, Sr.; and west by the Connie Maxwell Orphanage. The property is reported to be shown in an 1875 plat by B.F. Reynolds, although this plat was not identified during this study.

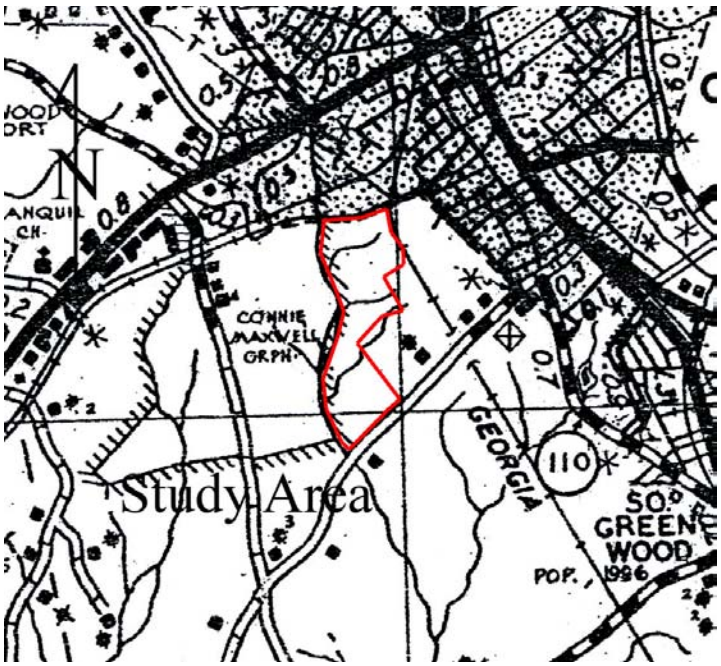

Figure 14. Portion of the 1938 *General Highway and Transportation Map of Greenwood County* showing the project area.

In 1930 Ellenberg sold his undivided one-half interest in the property to C.L. Wells, apparently in trade for the "premises" which may have explain the reduction of acreage to 104.35 acres (Greenwood County Clerk of Court, DB 47, pg. 91). A plat is referenced in the deed, although no plat book or page is provided. This may be the plat bearing the same date and surveyor that shows the portion retained by Ellenberg (Greenwood County Clerk of Court, PB 1, pg. 252). If so, it fails to show any structures and appears to be in the northern section of the tract.

In 1944 Wells sold his 104.35 acres to Mathews Cotton Mill for $4,500 (Greenwood County Clerk of Court, DB 68, pg. 405). The property by time was described as being bounded to the northeast by the Georgia and Florida Railroad; to the southeast by a public road (what is today W. Alexander Road, we presume); to the south by lands of J.S. Ellenberg; to the west by lands of the Connie Maxwell Orphanage and S.B. Marshall, now Mathews Cotton Mill; and to the north and northwest by Edgar Blake.

Mathews Cotton Mill merged with Greenwood Cotton Mills in July 1947 (Greenwood County Clerk of Court, DB 77, pg. 564), but retained this land. The property card for the parcel (Greenwood County Tax Assessor, Property ID 6845-589-080) reveals that in the 1950s the property was used as a cattle farm and there were several barns and a single small concrete block house.

In 2001 Greenwood Mills sold five tracts (identified as Tract 1, 2a, 2b, 3, and 3a) totaling 188.91 acres to the Genetic Endowment of South Carolina for $10 and other consideration. This represents our study tract and of the five parcels, the largest – Tract 3 with 143.46 acres – is the parcel that was acquired from Wells. The four smaller parcels (ranging in size from 0.02 to 42.94 acres were variously obtained from the Greenwood Family YMCA and the Connie Maxwell Children's Home (Greenwood County Clerk of Court, DB 664, pg. 271).

This suggests that at the turn of the century (and prior), the property was a family

farm, operated by the Blakes and later the Wells. During the 1920s and 1930s it may have been operated by absentee owners, and by about 1944

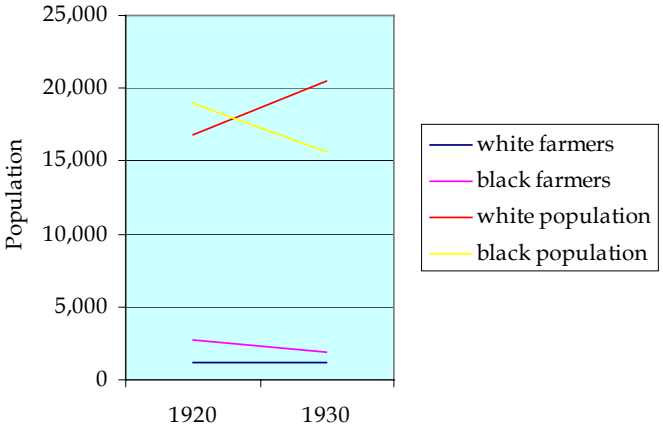

Figure 15. Comparison of African American white population in Greenwood County between 1920 and 1930.

on the property was used for cattle ranching and woodlots.

METHODS

Archaeological Field Methods

The initially proposed field techniques involved the placement of shovel tests at 100-foot intervals along transects placed at 100-foot intervals. All soil would be screened through ¼-inch mesh, with each test numbered sequentially by transect. Each test would measure about 1 foot square and would normally be taken to a depth of at least 1.0 foot or until subsoil was encountered. All cultural remains would be collected, except for mortar and brick, which would be quantitatively noted in the field and discarded. Notes would be maintained for profiles at any sites encountered.

The information required for completion of South Carolina Institute of Archaeology and Anthropology revisit site forms would be collected and photographs would be taken, if warranted in the opinion of the field investigators.

These plans were modified only in that shovel tests were not excavated on slopes greater than 10% or in areas where the red clay subsoil was visible on the surface.

For the tract, a total of 62 transects were set up at 100-foot intervals along the dirt roadway bisecting the property, which ran approximately south-southwest – north-northeast. Shovel tests worked east and west off the road at 100 foot intervals. A total of 475 shovel tests were excavated in the survey area plus additional 25-foot shovel tests for the identified sites. Consequently, about 110 of the 186 acres were shovel tested; the remainder of the tract was subjected to a pedestrian survey, but was not shovel tested.

The GPS positions were taken with a WAAS enabled Garmin 76 rover that tracks up to twelve satellites, each with a separate channel that is continuously being read. The benefit of parallel channel receivers is their improved sensitivity and ability to obtain and hold a satellite lock in difficult situations, such as in forests or urban environments where signal obstruction is a frequent problem. WAAS or Wide Area Augmentation System, is a system of satellites and ground stations that provide GPS signal corrections, yielding higher position accuracy – generally an accuracy of 10 feet or better 95% of the time. Both are vital concerns for the study area.

Architectural Survey

As previously discussed, we elected to use a 0.5 mile area of potential effect (APE). The architectural survey would record buildings, sites, structures, and objects which appeared to have been constructed before 1950. Typical of such projects, this survey recorded only those which have retained "some measure of its historic integrity" (Vivian n.d.:5) and which were visible from public roads.

For each identified resource, we would complete a Statewide Survey Site form and at least two representative photographs were taken. Permanent control numbers would be assigned by the Survey Staff and the S.C. Department of Archives and History at the conclusion of the study. The Site Forms for the resources identified during this study would be submitted to the S.C. Department of Archives and History.

Site Evaluation

Archaeological sites will be evaluated for further work based on the eligibility criteria for the National Register of Historic Places. Chicora Foundation only provides an opinion of National Register eligibility and the final determination is

made by the lead federal agency, in consultation with the State Historic Preservation Officer at the South Carolina Department of Archives and History.

The criteria for eligibility to the National Register of Historic Places is described by 36CFR60.4, which states:

> the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and
>
> a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b. that are associated with the lives of persons significant in our past; or
>
> c. that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d. that have yielded, or may be likely to yield, information important in prehistory or history.

National Register Bulletin 36 (Townsend et al. 1993) provides an evaluative process that contains five steps for forming a clearly defined explicit rationale for either the site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as ceramics, lithics, subsistence remains, architectural remains, or sub-surface features;
- identification of the historic context applicable to the site, providing a framework for the evaluative process;
- identification of the important research questions the site might be able to address, given the data sets and the context;
- evaluation of the site's archaeological integrity to ensure that the data sets were sufficiently well preserved to address the research questions; and
- identification of important research questions among all of those which might be asked and answered at the site.

This approach, of course, has been developed for use documenting eligibility of sites being actually nominated to the National Register of Historic Places where the evaluative process must stand alone, with relatively little reference to other documentation and where typically only one site is being considered. As a result, some aspects of the evaluative process have been summarized, but we have tried to focus on an archaeological site's ability to address significant research topics within the context of its available data sets.

Laboratory Analysis

The cleaning and analysis of artifacts was

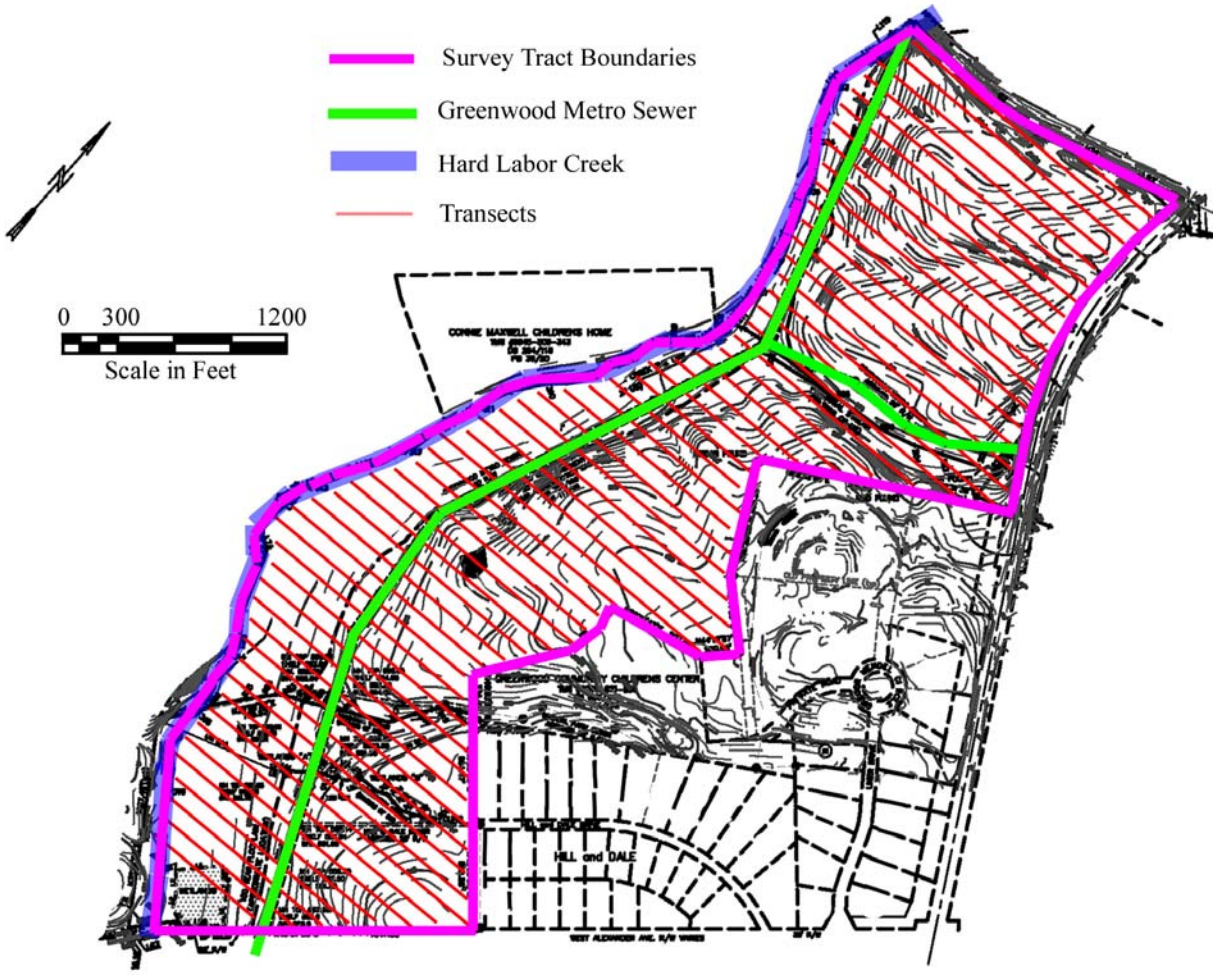

Figure 16. Study tract showing transects.

conducted in Columbia at the Chicora Foundation laboratories. These materials have been catalogued and accessioned for curation at the

South Carolina Institute of Archaeology and Anthropology, the closest regional repository. A site form for each of the identified archaeological sites has been filed with the South Carolina Institute of Archaeology and Anthropology. Field notes have been prepared for curation using archival standards and will be transferred to that agency as soon as the project is complete.

Analysis of the collections followed professionally accepted standard with a level of intensity suitable to the quantity and quality of the remains. In general, the temporal, cultural, and typological classifications of historic remains follow such authors as Price (1979) and South (1977).

RESULTS OF SURVEY

Introduction

As a result of this cultural resources survey the three previously recorded archaeological sites (38GN541-543) were relocated and assessed (Figure 17). Site 38GN541 is a Late Archaic surface scatter that is recommended not eligible for the National Register. Site 38GN542 is a nineteenth century cemetery that is recommended eligible for the National Register. Site 38GN543 is a nineteenth to twentieth century scatter located in Hard Labor Creek. This site is recommended not eligible for the National Register.

The architectural survey revisited the architectural sites 0042-0093 (Greenwood Mill Village), 0089, and 0094 the culvert supporting a railroad over Hard Labor Creek. These sites, however, have already been determined not eligible for the National Register. No additional architectural sites or structures were found that may be potentially eligible for the National Register.

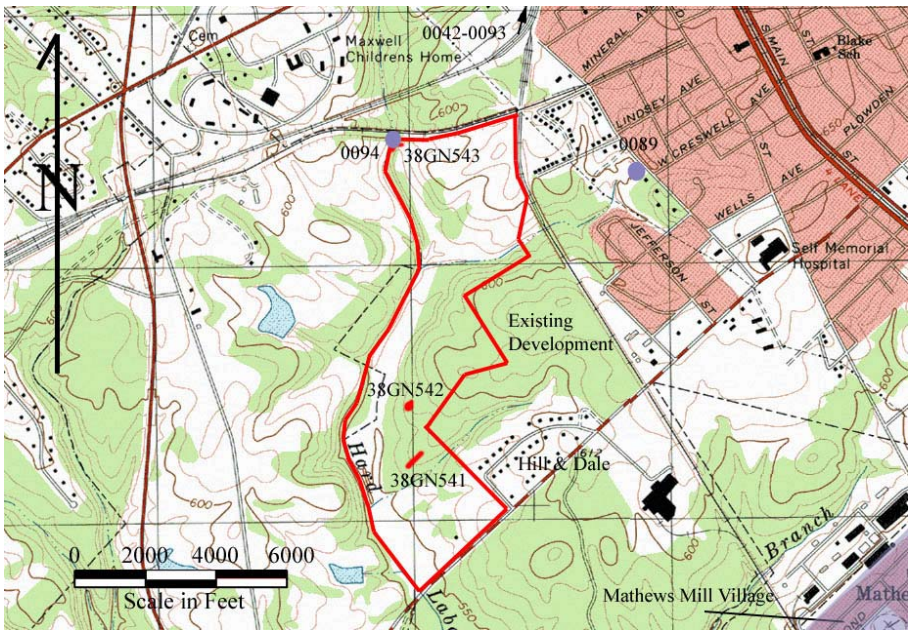

Figure 17. Topographic map showing the identified sites.

Archaeological Resources

38GN541

Site 38GN541 (Figure 18) is a surface lithic scatter located in a mixed pine and hardwood forest on an eroded ridge side slope. The area where the site was observed has good surface visibility since a sewer line had been constructed. Two GPS UTMs were obtained marking the beginning (392057E 3781270N) and the end (391958E 3781230N) of the oblong shaped site (NAD27 datum).

The site was originally recorded during a Cultural Resources Assessment (CRA) of the property in 2003, however no shovel testing was performed. The current undertaking conducted shovel testing at 25-foot intervals across the site area, running east from the access road along Hard Labor Creek. No subsurface artifacts were recovered. In fact, all the shovel tests revealed highly eroded soils. Generally soils in this area resemble the Cecil Series, which has an Ap horizon of brown (7.5YR5/4) sandy loam to 0.4 foot in depth over a red (2.5YR4/6) clay to 2.3 feet in depth. The soils at 38GN541 were red (2.5YR4/8) clay, which is found over 2.3 feet in

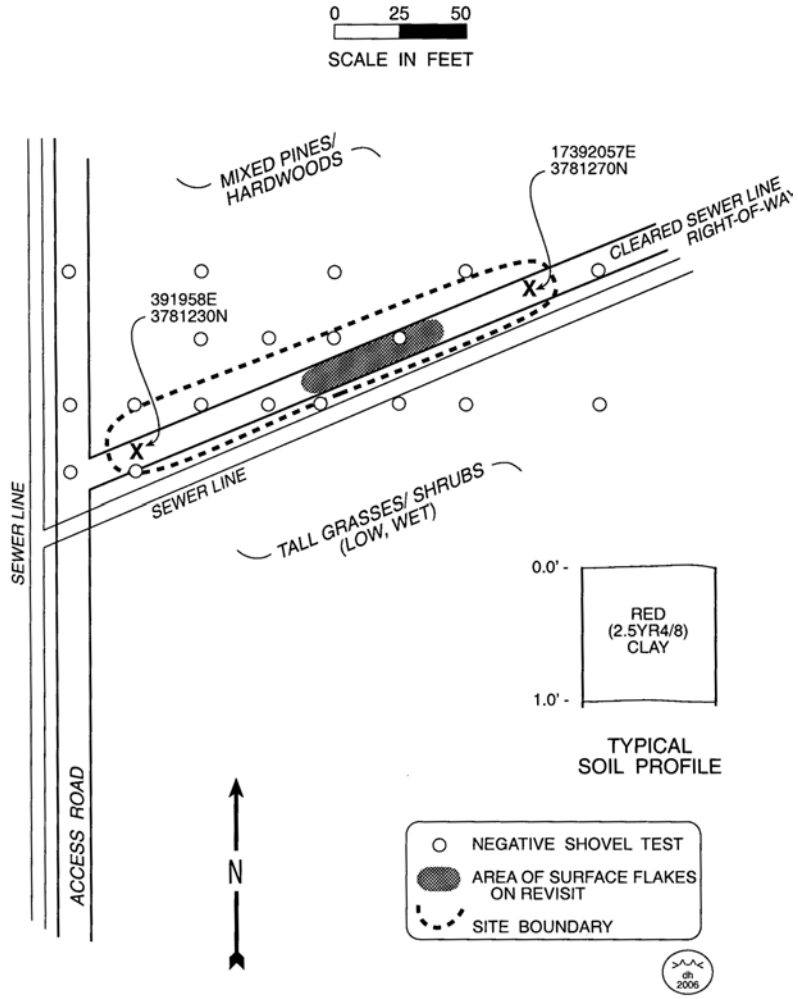

Figure 18. Sketch map and soil profile for 38GN541.

depth, showing significant erosion.

In addition, the collection of surface artifacts appears to be much smaller than was originally identified. The site form from 2003 (recorded by Tom Covington) recorded a site dimension of 20 feet north-south by 350 feet east-west. The current survey identified an area of only about 20 feet north-south by 50 feet east-west.

This discrepancy can be explained by the fact that in 2003, the area had been recently bulldozed, but by 2006 a sewer line had been constructed and the soil had probably been scattered or turned back into the earth. A low, wet area is located to the south of the site, so erosion may have also occurred.

During the recordation of the site in 2003, at least 56 artifacts were observed including a metavolcanic flake (n=1), quartz flakes (n=45), a hammerstone (n=1), quartz biface fragments (n=9), and a chert Savannah River Stemmed Point (n=1).The current survey identified significantly fewer remains consisting of only 12 quartz flakes and two chert flakes. Only the Savannah River Stemmed Point found in 2003 is diagnostic, dating the site to the Late Archaic.

While the site may have had integrity in 2003, it no longer contains the data sets needed to be eligible for the National Register. There is no indication of stratigraphy or features and there is a high incident of erosion. Because a sewer line was constructed between site visits, the site has been significantly damaged. It is unlikely that this site will be able to address any significant research questions.

Site 38GN541 is recommended not eligible for the National Register of Historic Places. No additional management activity is recommended pending the review and concurrence by the State Historic Preservation Office.

38GN542

Site 38GN542 (Figure 19) is an early nineteenth century cemetery located on a ridge side slope at an elevation of about 570 feet AMSL. A central UTM coordinate is 391996E 3781456N (NAD27 datum).

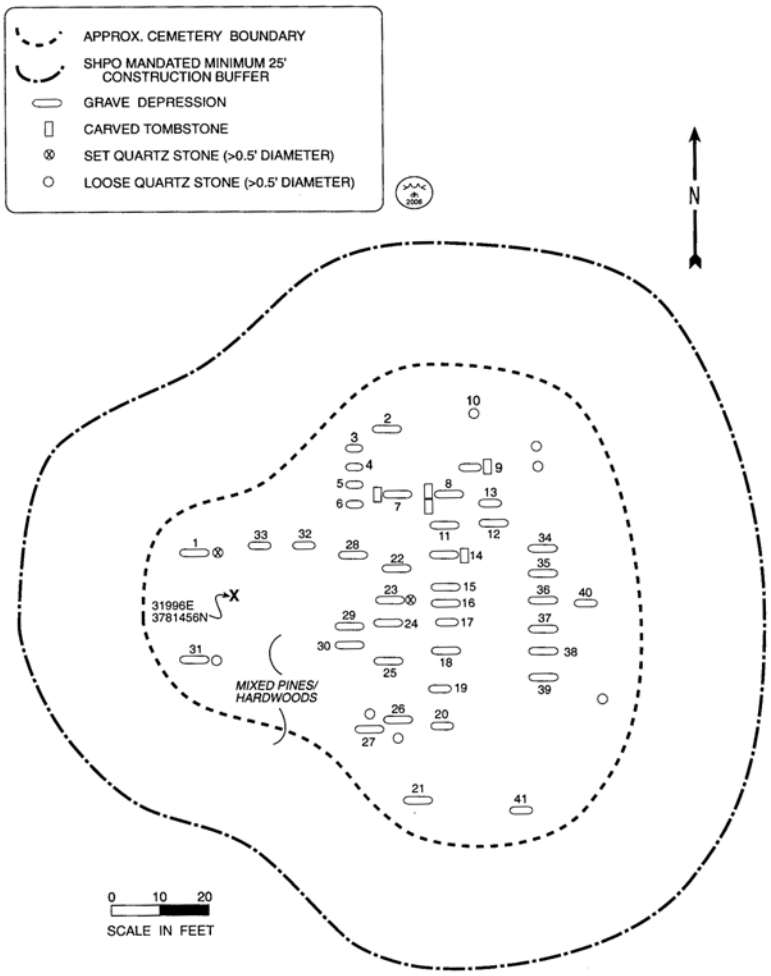

Figure 19. Sketch map showing the cemetery.

The cemetery was first identified during the 2003 CRA of the property. Several headstones and grave depressions were initially observed and the site was estimated at 100 feet by 100 feet.

No shovel testing was performed inside the cemetery, however surrounding soils resembled an eroded Cecil Series. Generally Cecil soils have an Ap horizon of brown (7.5YR5/4) sandy loam to a depth of 0.4 foot over a red (2.5YR4/6) clay to 2.3 feet in depth. At this site the upper 0.4 feet of soil has been eroded, leaving a red (2.5YR4/8) clay.

A penetrometer was used in an effort to identify burials that may not be obviously seen. This device measures soil compaction with the idea that the site of a burial would be less compact than an area of undisturbed soils. However the hard, clay soils and lack of recent rainfall prevented accurate readings.

The site dimensions, which were the same as originally designated, were established based on the grave depressions and headstones. The current survey identified approximately 41 depressions, five hand-carved stone markers, and several quartzite stones (probably fieldstone grave markers).

Although the carving is difficult to read, some words could be deciphered. For example, one stone has the name "Lucy Mkenzie" (Grave 8) who "departed this life August 14, 1804" (Figure 20). The only other stone in which a date could be obtained was from an individual with the last name of "Foster" (Grave 8) who was born in 1800. Grave 9 had the letters "MLLY" etched into a decoratively carved stone and another stone had the compass and rule symbol (Figure 21) for the Masons (Grave 14), however no date could be obtained from these stones.

Figure 20. View of a hand-carved stone at the cemetery.

While cemeteries may generally provide good bioanthropological data about lifeways and give insight to diet, disease, and ethnicity, 38GN542 gives us the opportunity to study a very early and untouched cemetery. Site 38GN542 is recommended eligible under Criterion D (information potential) for its ability to contribute information on population, demographics, diet and foodways, and health. Although it has not been possible to demonstrate the condition of human remains in this cemetery, the presence of clay soils does not necessarily result in the loss of skeletal material. Rose's (1985) study found excellent preservation is silts; Atkinson (1987) recovered significant information from a cemetery on the Natchez Trace in Tennessee; and Garrow et al. (1985) identified excellent remains from a Chamblee, Georgia cemetery. In addition, even degrade bone can contribute some metric data as well as chemical studies. And there is the potential for the study of coffin shapes and mortuary artifacts in even degraded contexts.

This cemetery is also recommended eligible under Criterion C (distinctive elements) since its stones represent excellent examples of folk craft practices and grave memorialization.

With additional research to identify the individuals buried in the cemetery and their community, it may that eligibility could be extended to Criteria B.

While extreme care should always be taken by construction crews to avoid the cemetery, the State Historic Preservation Office has a mandated a minimum 25-foot buffer around all cemeteries. While the cemetery dimensions are about 100 feet by 100 feet, the buffer would create an area of 0.4 acre in which no construction could take place. We also recommend

Figure 21. View of a hand-carved stone showing the Mason's

that a fence be erected around the cemetery and that the property be recorded with the Greenwood County Clerk of Court as a graveyard.

38GN543

Site 38GN543 (Figure 22) is a late nineteenth to early twentieth century scatter located in Hard Labor Creek at an elevation of about 550 feet AMSL. A central UTM coordinate for the site is 391939E 3782489N (NAD27 datum).

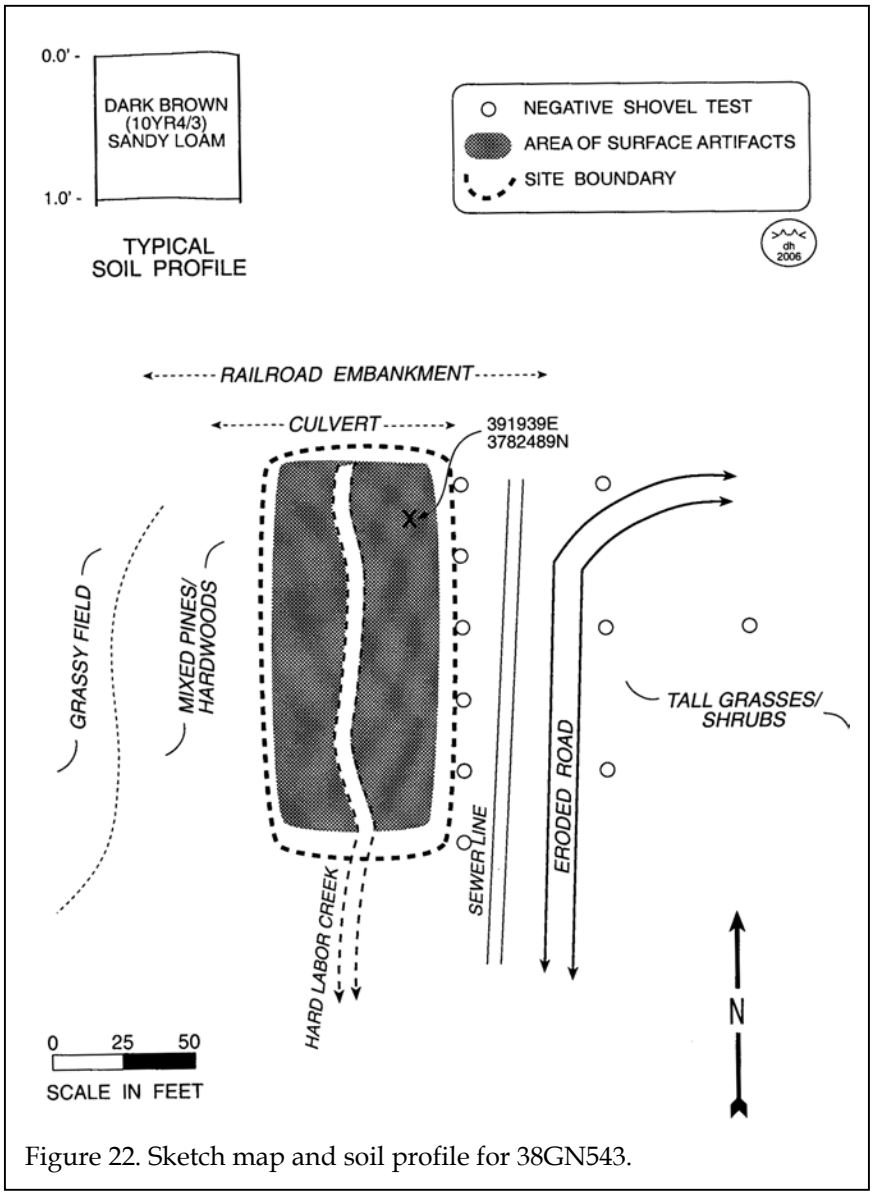

Figure 22. Sketch map and soil profile for 38GN543.

The site was originally recorded during the CRA in 2003, however no shovel testing was performed. The current survey shovel tested along the edge of the bank, which produced Mecklenburg soils that have an Ap horizon of dark brown (7.5YR4/4) sandy loam to a depth of 0.4 foot over a yellowish red (5YR4/6) clay to over 1.0 foot in depth. No artifacts, however, were found in these shovel tests. The soils in Hard Labor Creek resemble the Cartecay Series, which has an Ap horizon of dark brown (10YR4/3) very fine sandy loam to 0.7 foot in depth over a strong brown (7.5YR5/6) very fine sandy loam to 1.7 feet in depth. No shovel tests, however, were performed in the creek.

No artifacts were collected from the site, which appears to have washed from upstream (with artifacts deposited in the floodzone on the surface as well as in the waters of the creek) given the eroded or smoothed surface of all remains identified. All of the artifacts seem typical from the late nineteenth to the early twentieth century including manganese glass, aqua glass, and clear glass bottle fragments, decalcomania print and undecorated whiteware, and various stoneware fragments.

During the CRA in March of 2003, the water level in the creek was up, exposing more artifacts. In July of 2006, the water level was down and it appeared as though much of the site was covered by sandy loam or had washed downstream. The site still measured about 125 feet


Figure 23. View of culvert in 2003.

north-south by 50 feet east-west and is located adjacent to a brick culvert (0094).

This additional investigation the site is redeposited, perhaps from upstream, with the materials eroding into the waterway and being transported to their current location. Consequently, the site lacks integrity.

The artifacts themselves are common, but appear to be only glass bottles and ceramics. They lack the data sets needed to be able to address significant research questions.

Site 38GN543 is recommended not eligible for the National Register of Historic Places for its lack of integrity and inability to address significant research questions. No additional management activity is recommended pending the review and concurrence of the State Historic Preservation Office.

Architectural Resources

The previously recorded architectural features were revisited during the current survey. The Greenwood Mill Village (0042-0093), a house at 962 Spring Street (0089), a house from 820 Edgefield Street (0090), and a culvert (0094) at Hard Labor Creek and a railroad trestle have all been determined not eligible for the National Register by the State Historic Preservation Office.

The culvert (0094) is the only feature found on the current project tract. During the CRA, photos were taken of the culvert (Figure 23 and 24). The current survey was going to reassess the condition of the culvert, however a thick layer of kudzu now covers the side slope down to the

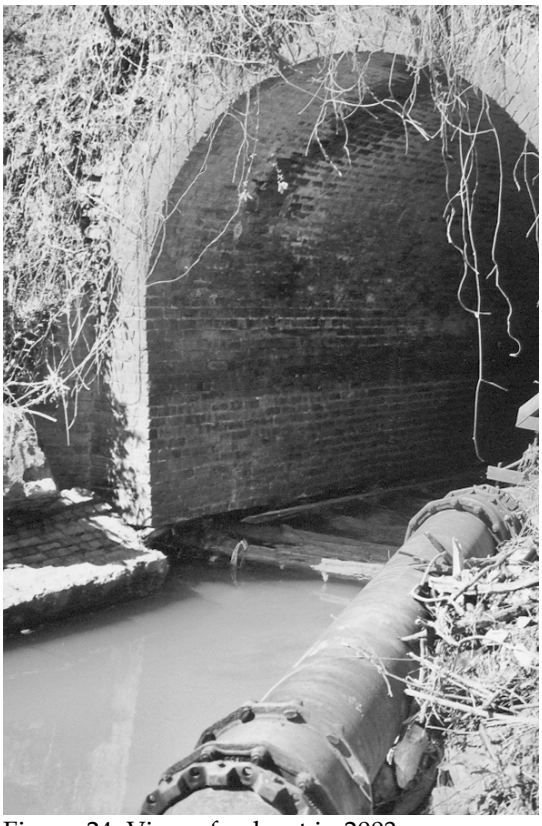
Figure 24. View of culvert in 2003.

Figure 25. Current view of culvert.

creek, so the culvert is completely hidden (Figure 25).

No additional architectural features were found in the APE that may be potentially eligible for the National Register of Historic Places.

CONCLUSIONS

This study involved the examination of a tract of approximately 186 acres in Greenwood County to be used for a biotechnology park. This work, conducted for Mr. Roger Stevenson of the Greenwood Genetics Center, examined archaeological sites and cultural resources found in the proposed project area and is intended to assist the company in complying with their historic preservation responsibilities.

As a result of this investigation, three archaeological sites, 38GN541-543**,** were evaluated from a CRA in 2003. Site 38GN541 is a prehistoric lithic scatter that is recommended not eligible for the National Register. Site 38GN542 is an early nineteenth century cemetery that is eligible under Criteria C (distinctive elements) and D (information potential). Site 38GN543 is a late nineteenth to early twentieth century scatter in Hard Labor Creek that is recommended not eligible for the National Register.

A survey of public roads within 0.5 mile was performed that revisited sites 0042-0093 (Greenwood Mill Village), 0089 and 0090 (both houses), and 0094 (culvert). These sites had been previously determined not eligible for the National Register. No additional resources were found in the APE that may be potentially eligible for the National Register.

Upon review by the SC State Historic Preservation Office, we have been informed they concur that both 38GN541 and 38GN543 are not eligible for inclusion on the National Register. They further state that the cemetery, 38GN542, is potentially eligible under Criterion A, "association with events that have made a significant contribution to the broad patterns of our history," and Criterion D, "information potential." The SHPO does not concur that the site is eligible under Criterion C, "distinctive characteristics."

The SHPO fails to specify what broad historical patterns or events may be represented at 38GN542 and further specifies that additional historical research would be necessary to elucidate these patterns. National Register Bulletin 41, *Guidelines for Evaluating and Registering Cemeteries and Burial Places* provide examples under this criteria: a cemetery that helps define a sense of place for the community, a cemetery that clearly defines evolving mortuary styles, or a cemetery that is associated with an important battle. None of these examples are appropriate for 38GN542 – there is no sense of place as the cemetery has been forgotten (and apparently was forgotten rather early); while the cemetery illustrates one style of memorialization, there is no evidence of the evolutionary process; and there is absolutely no hint of any historical event taking place in association with this cemetery.

The SHPO also discounts, with no comment, our position that the cemetery provides an excellent and intact example of vernacular memorialization through the fluid process of hand carving. Cemeteries with such carving are often significantly altered as families gain financial stability and replace these early hand-crafted stones with commercial markers, often burying or destroying the earlier markers. At this cemetery that process has not taken place (i.e., there is no evidence of the "evolution of burial customs," but there is evidence of one particular form that is often lost through evolutionary processes).

The SHPO also maintains that additional historical research is necessary to resolve eligibility under Criterion D. It is our experience that cemeteries such as this will not be identified in the historical record. Indeed, by the late nineteenth century this cemetery was ignored by deeds and the few plats identified. Archaeological investigation at this cemetery – should it ever be

conducted – would likely need to be conducted in order to elucidate the historical record. Archaeology is not likely to be reduced to a "handmaiden of history" in this particular situation. Nor is there any specific need to assume that without detailed historical information archaeology is unable to provide detailed and convincing information return. The placement of graves, the nature of the coffins or burial containers used, the presence of coffin hardware, the clothing of the corpse, the depth of the grave, not to mention any bioanthropological data that may be present – all are able to make significant contributions.

Likewise, the SHPO specifies additional boundary work; yet, the boundary is based on physical features, including depressions and location of stones. A cost-effective technique provided little additional information, leaving only very expensive ground penetrating radar or very intrusive mechanical stripping to satisfy the SHPO. It is our professional opinion that neither approach is warranted. If there is concern on the part of the SHPO, they have previously specified that their office reserves the right to negotiate buffers in excess of 25-feet. This offers a perfectly reasonable and likely cost-effective approach.

In sum, we maintain our recommendation that the 38GN542 cemetery is eligible for inclusion on the National Register under Criterion C, "distinctive characteristics" and Criterion D, "information potential." No additional historical research is necessary to establish either criteria nor is additional boundary work necessary. This additional work is needlessly expensive and has a low probability of providing useful information.

It is possible that archaeological remains may be encountered during construction activities. As always, contractors should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office, or Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No further land altering activities should take place in the vicinity of these discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

SOURCES CITED

Adams, Natalie

1994 *Archaeological Survey of the Greenwood County-Duke's Hodges Transmission Line, Greenwood County, South Carolina*. Research Contribution 134. Chicora Foundation, Inc., Columbia.

Anderson, David G.

1989a Review of *Late Archaic Landscapes*, by Steven Howard Savage. *South Carolina Antiquities* 21:65-69.

1989b The Mississippian in South Carolina. In *Studies in South Carolina Archaeology: Essays in Honor of Robert L. Stephenson*, edited by Albert C. Goodyear and Glen Hanson, pp. 101-132. Anthropological Studies 9. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1992 Models of Paleoindian and Early Archaic Settlement in the Lower Southeast. In *Paleoindian and Early Archaic Period Research in the Lower Southeast: A South Carolina Perspective*, pp.28-47, edited by David G. Anderson, Kenneth E. Sassaman, and Christopher Judge. Council of South Carolina Professional Archaeologists, Columbia.

1994 *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast*. University of Alabama Press, Tuscaloosa.

Anderson, David G. and Glen T. Hanson

1988 Early Archaic Settlement in the Southeastern United States: A Case Study from the Savannah River Valley. *American Antiquity* 53:262-286.

Anderson, David G. and Joseph Schuldenrein (editors)

1982 *Prehistoric Human Ecology Along the Upper Savannah River: Excavations at the Rucker's Bottom, Abbeville and Bullard Site Groups*. Commonwealth Associates, Inc., Jackson, Michigan. Submitted to National Park Service, Archaeological Services Branch, Atlanta.

Anderson, David G. and J.W. Joseph

1988 *Prehistory and History Along the Upper Savannah River*. Interagency Archaeological Services, National Park Service, Atlanta.

Anderson, David G. and Kenneth E. Sassaman

1996 *The Paleoindian and Early Archaic Southeast*. University of Alabama Press, Tuscaloosa.

Anonymous

1884 *South Carolina in 1884: A View of the Industrial Life of the State*. The News and Courier, Charleston, South Carolina.

Atkinson, James R.

1987 *The Blackburn Cemetery: An Abandoned Burial Site on the Old Natchez Trace in Maury County, Tennessee.* Southeast

Archaeological Center, National Park Service, Tallahassee.

Baker, Mary Neel
1931 *The Economic History of Abbeville District, 1860-1876*. Unpublished M.A. thesis, Department of History, University of South Carolina, Columbia.

Beardsley, Edward H.
1987 *A History of Neglect: Health Care for Blacks and Mill Workers in the Twentieth-Century South*. University of Tennessee Press, Knoxville.

Binford, Lewis R.
1980 Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45:4-20.

Braun, Lucy
1950 *Deciduous Forests of Eastern North America*. Hafner Publishing, New York.

Brooks, Mark J. and Glen T. Hanson
1987 *Late Archaic-Late Woodland Adaptive Stability and Change in the Steel Creek Watershed, South Carolina*. Anthropological Studies 6. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Brooks, Richard D.
1981 *Initial Historic Overview of the Savannah River Plant, Aiken and Barnwell Counties, South Carolina*. Research Manuscript Series 170. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Cabak, Melanie A., Mark D. Groover, and Mary Inkrot
1999 Rural Modernization During the Recent Past: Farmstead Archaeology in the Aiken Plateau. *Historical Archaeology* 33(4):19-43.

Cable, John S.
1977 *Subsurface Tests of 38GR30 and 38GR66, Two Sites on the Reedy River, Greenville County, South Carolina*. Research Manuscript Series 120. S.C. Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

1982 Organizational Variability in Piedmont Hunter-Gatherer Lithic Assemblages. In *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont*, assembled by Stephen R. Claggett and John S. Cable, pp. 637-688. Report 2386, Commonwealth Associates, Inc., Jackson, Michigan.

1994 Book Note on *Late Archaic Landscapes*, by Steven Howard Savage. *American Antiquity* 59:179.

Caldwell, Joseph R.
1954 The Old Quartz Industry of Piedmont Georgia and South Carolina. *Southern Indian Studies* 5:37-38.

1958 *Trend and Tradition in the Prehistory of the Eastern United States*. Memoirs of the American Anthropological Association Number 88.

Camp, Wallace J. and Edward C. Herren
1980 *Soil Survey of Greenwood County, South Carolina*. U.S.D.A., Soil Conservation Service, Washington, D.C.

Canouts, Veletta and Albert C. Goodyear, III
1985. Lithic Scatters on the South Carolina Piedmont. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and Trawick Ward, pp. 180-194. University of Alabama Press, University, Alabama.

Carlton, David L.
1982 *Mill and Town in South Carolina 1800-1920*. Louisiana State University Press, Baton Rouge.

Clayton, Fredrick Van
1988 *Settlement of Pendleton District, 1777-1800*. Southern Historical Press, Easley, South Carolina.

Coe, Joffre L.
1952 The Cultural Sequence of the Carolina Piedmont. In *Archaeology of the Eastern United States*, edited by J.B. Griffin, pp. 301-311. University of Chicago Press, Chicago.

1964 The Formative Cultures of the Carolina Piedmont. *Transactions of the American Philosophical Society* 54(5).

Derting, Keith, Sharon Pekrul, and Charles Rinehart
1990 *A Comprehensive Bibliography of South Carolina Archaeology*. Research Manuscript Series 211. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Dickens, Roy
1970 *The Pisgah Culture and its Place in the Prehistory of the Southern Appalachians*. Ph.D. dissertation, Department of Anthropology, University of North Carolina, Chapel Hill.

Dickson, Frank A.
1975 *Journeys into the Past The Anderson Region's Heritage*. n.p., n.p.

Edgar, Walter
1998 *South Carolina: A History*. University of South Carolina Press, Columbia.

Egloff, Brian J.
1967 *An Analysis of Ceramics from Historic Cherokee Towns.* Unpublished masters thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

Elliott, Daniel T.
1981 *Soapstone Use in the Wallace Reservoir*. Wallace Reservoir Project Contribution 5. Department of Anthropology, University of Georgia, Athens.

Ferguson, Leland
1971 *South Appalachian Mississippian*. Unpublished Ph.D. dissertation, Department of Anthropology, University of North Carolina, Chapel Hill. University Microfilms, Ann Arbor, Michigan.

Foner, Eric and Olivia Mahoney
1995 *America's Reconstruction: People and Politics After the Civil War*. Harper Perennial, New York.

Ford, Lacy K., Jr.
1988 *Origins of Southern Radicalism: The South Carolina Upcountry, 1800-1860*. Oxford University Press, New York.

Fuller, Elizabeth B.
1969 *Anderson County Sketches*. Anderson County Tricentennial Committee, Anderson, South Carolina.

Garrow, Patrick H., Steve A. Symes, and Henry W. Case
1985 *Physical Anthropology and Archaeological Investigations of the Nancy Creek Primitive Baptist Church Cemetery, Chamblee, Georgia.* Garrow and Associates, Atlanta.

Goodyear, Albert C., James L. Michie, and Tommy Charles
1989 The Earliest South Carolinians. In *Studies in South Carolina Archaeology*, edited by Albert C. Goodyear and Glen T. Hanson, pp. 19-52. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Goodyear, Albert C., John H. House, and Neal W. Ackerly
1979 *Laurens-Anderson: An Archaeological Study of the South Carolina Inter-riverine Piedmont*. Anthropological Study 4. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Grange, Roger D.
1972 The I.C. Few Site (38PN2). Unpublished manuscript on file at the South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Hasselton, George M.
1974 Some Reconnaissance Geomorphological Observations in Northwestern South Carolina and Adjacent North Carolina. *Geologic Notes* 18(4):60-67.

Hatley, Tom
1993 *The Dividing Paths: Cherokees and South Carolinians Through the Era of the Revolution*. Oxford University Press, New York.

Herren, Edward C.
1979 *Soil Survey of Anderson County, South Carolina*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

1980 *Soil Survey of Abbeville County, South Carolina*. U.S. Department of Agriculture, Soil Conservation Service, Washington, D.C.

Hilliard, Sam B.
1984 *Atlas of Antebellum Southern Agriculture*. Louisiana State University Press, Baton Rouge.

Holden, Patricia
1966 *An Archaeological Survey of Transylvania County, N.C.* Unpublished M.A. thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

House, John H. and David L. Ballenger
1976 *An Archaeological Survey of the Interstate 77 Route in the South Carolina Piedmont*. Research Manuscript Series 104. South Carolina Institute of Archaeology and Anthropology, University of

South Carolina, Columbia.

House, John H. and Ronald W. Wogaman
1978 *Windy Ridge: A Prehistoric Site in the Inter-Riverine Piedmont in South Carolina*. Anthropological Studies 3. Occasional Papers of the Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Johnson, Thomas F.
1970 *Paleoenvironmental Analysis and Structural Petrogenesis of the Carolina Slate Belt near Columbia, South Carolina*. Unpublished M.S. Thesis, Department of Geology, University of South Carolina, Columbia.

Keel, Bennie
1976 *Cherokee Archaeology: A Study of the Appalachian Summit*. University of Tennessee Press, Knoxville.

King, Thomas F.
1998 *Cultural Resource Laws and Practice: An Introductory Guide.* Altamira Press, Walnut Creek, California.

Kovacik, Charles F. and John J. Winberry
1989 *South Carolina: The Making of a Landscape*. University of South Carolina Press, Columbia.

Küchler, A.W.
1964 *Potential Natural Vegetation of the Conterminous United States*. Special Publication No. 36. American Geographical Society, New York.

Lane, Mills
1984 *Architecture of the Old South: South Carolina*. Beehive Press Book, New York.

Lowry, M.W.
1934 *Reconnaissance Erosion Survey of the State of South Carolina*. United States Department of Agriculture, Soil Conservation Service.

McAlester, Virginia and Lee McAlester
1984 *A Field Guide to American Houses*. Alfred A. Knopf, New York.

Michie, James L.
1977 *The Late Pleistocene Human Occupation of South Carolina*. Unpublished undergraduate honors thesis, Department of Anthropology, University of South Carolina.

Milling, J. Chapman
1958 *Beneath So Kind A Sky*. University of South Carolina Press, Columbia.

Mills, Robert
1972 [1826] *Statistics of South Carolina*. Reprinted. The Reprint Press, Spartanburg, South Carolina. Originally published 1826, Hurlburt and Lloyd, Charleston.

Murphy, Carolyn Hanna
1995 *Carolina Rocks!: The Geology of South Carolina*. Sandlapper Publishing, Orangeburg.

Nelson, Scott Reynolds
1999 *Iron Confederacies: Southern Railways, Klan Violence, and Reconstruction*. University of North Carolina Press, Chapel Hill.

Oliver, Billy
1981 *The Piedmont Tradition: Refinement of the Savannah River Stemmed*

Point Type. Unpublished masters thesis, Department of Anthropology, University of North Carolina, Chapel Hill.

Orser, Charles E., Jr.
1988 *The Material Basis of the Postbellum Plantation: Historical Archaeology in the South Carolina Piedmont*. University of Georgia Press, Athens.

Petty, Julian J.
1945 Population. In *South Carolina: Economic and Social Conditions in 1944*. University of South Carolina Publications, The Social Sciences, Series 1, Vol. 1:28-49.

Price, Jeffrey
1992 *Piedmont South Carolina: A Cultural Resources Survey of Selected Timber Stands in Sumter National Forest, South Carolina*. Southeastern Archaeological Services, Inc. Athens, Georgia.

Purrington, Burton L.
1983 Ancient Mountaineers: An Overview of the Prehistoric Archaeology of North Carolina's Western Mountain Region. In *The Prehistory of North Carolina: An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey J. Crow, pp. 83-160. North Carolina Division of Archives and History, Department of Cultural Resources, Raleigh.

Rafferty, Janet
1992 Review of *Late Archaic Landscapes*. *Southeastern Archaeology* 11(1):72.

Rose, Jerome C., editor
1985 *Gone to a Better Land: A Biohistory of a Rural Black Cemetery in the Post-Reconstruction South*. Research Series 25. Arkansas Archeological Survey, Fayetteville.

Ruffin, Edmund
1843 *Report on the Commencement and Progress of the Agricultural Survey of South Carolina for 1843*. A.H. Pemberton, Columbia.

Sassaman, Kenneth E.
1983 *Middle and Late Archaic Settlement in the South Carolina Piedmont*. M.A. thesis, Department of Anthropology, University of South Carolina, Columbia.

Sassaman, Kenneth E. and David G. Anderson
1994 *Middle and Late Archaic Archaeological Records of South Carolina*. Council of South Carolina Professional Archaeologists, Columbia.

Sassaman, Kenneth E., Glen T. Hanson, and Tommy Charles
1988 Raw Material Procurement and the Reduction of Hunter-Gatherer Range in the Savannah River Valley. *Southeastern Archaeology* 7(2):79-94.

Sassaman, Kenneth E., Mark J. Brooks, Glen T. Hanson, and David G. Anderson
1990 *Native American Prehistory of the Middle Savannah River Valley: A Synthesis of Archaeological Investigations on the Savannah River Site, Aiken and Barnwell Counties, South Carolina*. Savannah River Archaeological Research Papers 1. Occasional Papers of the Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology, University of

South Carolina, Columbia.

Savage, Steven H.
1989 *Late Archaic Landscapes*. Anthropological Studies 8. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Shelford, Victor E.
1963 *The Ecology of North America*. University of Illinois Press, Urbana.

S.C. Department of Agriculture, Commerce, and Immigration
1907 *Handbook of South Carolina: Resources, Institutions and Industries of the State*. The State Company, Columbia.

Strahler, A.N.
1964 Quantitative Geomorphology of Drainage Basins and Channel Networks. In *Handbook of Applied Hydrology*, edited by Ven Te Chow, pp. 439-476. McGraw-Hill, New York.

Tippett, V. Ann and William H. Marquardt
1981 Interassemblage Variation in a Stratified Site: A Piedmont Example. *South Carolina Antiquities* 13.

Trimble, Stanley W.
1974 *Man-Induced Soil Erosion on the Southern Piedmont, 1700-1970*. Soil Conservation Society of America, Aukey, Iowa.

Trinkley, Michael
1990 *An Archaeological Context for the South Carolina Woodland Period*. Chicora Foundation Research Series 22. Chicora Foundation, Inc. Columbia, South Carolina.

Trinkley, Michael and Olga Caballero
1983 *An Archaeological and Historical Evaluation of the I-85 Northern Alternative, Spartanburg County, South Carolina*. S.C. Department of Highways and Public Transportation.

U.S. Department of Agriculture
1980 *Yadkin-Pee Dee River Basin, North and South Carolina – Forest Resources*. U.S. Department of Agriculture, Washington, D.C.

Vandiver, Louise A.
1991 *Traditions and History of Anderson County*. McNaughton and Gunn, n.p.

Wallace, David D.
1951 *South Carolina: A Short History, 1520-1948*. University of South Carolina Press, Columbia.

Walthall, John A.
1980 *Prehistoric Indians of the Southeast: Archaeology of Alabama and the Middle South*. University of Alabama Press, University.

Watson, E.J.
1916 *Twelfth Annual Report of the Commissioner of Agriculture, Commerce and Industries of the State of South Carolina*. Gonzales and Bryan, Columbia.

Wauchope, Robert
1966 Archaeological Survey of Northern Georgia. *Society for American Archaeology Memoir* 21.

White, John W.
1982 *An Integration of Late Archaic Settlement Patterns for the South Carolina Piedmont*. M.A. thesis, Department of Anthropology,

University of Arkansas, Fayetteville.

Wilson, Homes Hogue
1986 Burials from the Warren Wilson Site: Some Biological and Behavioral Considerations. In *The Conference on Cherokee Prehistory* assembled by David Moore, pp. 42-72. Warren Wilson College, Swannanoa, North Carolina.

Wood, Dean and Thomas Gresham
1981 *Archaeological Test Excavations at 38LU107 Rabon Creek Watershed, Laurens County, South Carolina*. Southeastern Wildlife Services, Inc., Athens, Georgia.

Wood, Dean, Dan Elliott, Teressa Rudolph, and Dennis Blanton
1986 *Prehistory in the Richard B. Russell Reservoir: The Archaic and Woodland Periods of the Upper Savannah River: The Final Report of the Data Recovery at the Anderson and Elbert County Groups: 38AN8, 38AN29, 38AN126; 9EB17, 9EB19, and 9EB21*. Atlanta Interagency Archaeological Services Division, National Park Service, Russell Papers.

Zuczek, Richard
1996 *State of Rebellion: Reconstruction in South Carolina*. University of South Carolina Press, Columbia.

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